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Lessons From The Pharmacist

THE N. A. R. D. presents the medical profession with a "Physicians' Pocket Companion," which describes some important U. S. P. and N. F. preparations. The stated object is, "to acquaint the physician with some of the more important preparations of the latest editions of the U. S. P. and N. F." Incidentally an ulterior object is, to knock the various advertised proprietaries. These, from which the druggists have reaped fortunes, are now condemned and efforts are made to drive them out of existence.

Of such proprietaries, no less than 132 are named in the 25 active pages of this little pamphlet, and in every instance the recommendation is given that a pharmaceutic substitute be employed.

The manufacturers have secured remedies which they deemed of such value that they invested in their manufacture, spent large sums in advertising them, and succeeded in inducing the medical profession to utilize them very largely in their practice. Some of these preparations have become the standbys of the clinician. All have, in the past, contributed lavishly to the support of medical journals. Depending upon the patronage of the men who use these goods, the manufacturers of these proprietaries necessarily are compelled to keep the quality up to a standard that will satisfy the prescribers. Otherwise the costly plants become ill, and the business must suffer.

Now comes the N. A. R. D., and, while it does not condemn the use of these preparations, asks us to substitute the imitations that any pharmacist is supposed to be able to concoct.

Naturally, the retailer would rather have the profit heretofore reaped by the manufacturing chemist—we can undertsand that without demonstration—but, where do we doctors and our patients get off?

To both of us, it is a question of quality and cost; and, with the utmost good-will toward our retailing cousin, we must confess that we do not see the matter in his light. The great house can produce a better article at less cost than the "any-retailer" possibly can do. Many years ago, there appeared a preparation known as Dudley's emulsion of codliver-oil. It was made up with glycerin and pancreatin, besides calcium lactophosphate, and contained neither sugar nor gum. A competing firm bought up the right, and retired it as a competitor. Then this writer prescribed a bottleful of it to be prepared by a retail pharmacist. That man just charged the patient $4.00 for a bottle like that sold at $1.00 by the regular maker!

Nevertheless, this crusade is having its effect. We took the two medical monthlies that have the largest circulation among active clinicians and found that in 1 out of 99 display advertisements but 9 were of articles in the proscribed list. In the other, of 125 advertisements, only 10 were on this list. True, each had similar advertisements of proprietaries not listed for condemnation, but not otherwise differing from those on the N. A. R. D. expurgatory list. Probably for these no satisfactory substitutes have as yet been devised.

Now, while this move is designed to discourage the use of of these proprietaries and "knock" them, it is in reality an endorsement. They have approved themselves to such a degree that the pharmaceutical profession officially recognizes their value by providing substitutes. What greater boost could be given?

All this reads as though we were opposed to this movement of the N. A. R. D., yet, in truth, we are in favor of most of it, excepting mainly the motives influencing it. The desire of the retailer for more profits is an individual matter that does not concern us; if we use these things, our interests and those of the patient are with the manufacturing chemist. Nor are we at all enthused with the idea that we shall confine ourselves to articles in the U. S. P. and N. F.

We never shall admit the right of any set of men to limit our practice to *their* selection of remedies. Nor do we at all seek to dictate to our confrrères.

We adhere to our principle, that of the individual liberty of every doctor to use whatever he deems best for his patient: and we know that he can use to better advantage articles with which he is familiar, rather than those with which *we* are familiar. But, otherwise, we should like to see the entire medical profession drop every combination in and outside the Pharmacopeia and Formulary and confine himself to single remedies for single indications; and the doctor should devise his every prescription at the bedside, for that patient, for those indications that present themselves at that time. We like to hear a man say that he never treats two cases of the same disease in exactly the same way.

Our idea is this: Never give a drug without a clear idea of what it is going to do and how it is going to get out of the system. If you do not clearly see a definite reason for giving anything, then give nothing, but wait until a clear reason arises in your mind. Let Dame Nature have a chance, if you are not ready to take the responsibility of interfering with her.

The average man cries for better opportunities; while the fact is that he is literally surrounded with better opportunities but has not fitted himself to make good in any of them.—C. D. Larson.

STRICTLY ALKALOIDAL

That the "alkaloidal" method of treatment will never evolve into a sectarian school is evident—and this is in strict accord with the wishes of its American sponsors. But, that the alkaloidal idea is gradually permeating the subconscious medical thought and becoming dominant in medical practice, is increasingly evident. We shall take a pile of exchanges and see how far this statement is verified there:

We need not expect very much from our journalistic gleanings—therapeutic pessimism (which, being translated, signifies ignorance) is as yet too generally prevalent and only the crudest mechanical applications are fashionable. Still, some knowledge of the real activities of medical agencies is escaping from the alkaloidal arsenals and making itself manifest.

Bush (*N. Y. Med. Jour.*) has nothing to suggest for the pain and tenesmus of cystitis except morphine, and he rightly objects to its application in suppositories. Morphine exerts its narcotic effects chiefly upon the brain-centers and has scarcely any action upon the peripheral terminations of the sensory nerves. H. Earnest Goodman used to say that the treatment of cystitis comprised three A's—attitude, alkalis, and anodynes. In acute cases, hyoscine adds greatly to the relief afforded by morphine, while in chronic forms the remedy above all is arbutin. The last, like many of our most valuable plant-agents, is so slow in manifesting its activity that it wholly escapes the many who do not have time to wait for the curative processes of Dame Nature to manifest themselves.

Speaking of the treatment of influenza (*N. Y. Med. Jour.*), Wilcox mentions quinine with or without monobromated camphor, as very speedily relieving the muscular pains in this condition.

The Urologic and Cutaneous Review finds salicin useful in many dermatologic disorders, especially in dermatitis herpetiformis. Salicin has been overshadowed by the salicylates, just as a California "authority," to whom we suggested calcium sulphide saturation for scabies, caustically replied that he did not need to be told of this use of "sulphur."

The Medical World has an editorial upon solanine. This alkaloid replaces bromides, grain for dram, and can be administered hypodermically; remembering, though, that, if pushed to maximum dosage, irritation of the kidneys must be watched for. Any drug that is not a habit-inducer and, yet, will replace morphine deserves attention, and the use of solanine in neuralgia, gastralgia, and rheumatism should be tested fully. Also, any agent capable of relieving the suffering from gastric ulcer and cancer is too precious to be overlooked. The editorial in question specially suggests the use of solanine for hystero-epilepsy, as this alkaloid has been highly successful in dysmenorrhea of various origin. The present excessive cost of this alkaloid tends to militate against its general employment, but, as its source (potato-sprouts) certainly is cheap and abundant, we may expect the price to fall as the demand for it grows.

L. E. Barton (*Med. World*) recommends morphine in pneumonia, for quieting the medulla. With this, though, we do not agree. But how long will it be before the medical consciousness will be suddenly illuminated by the thought that the same advantages that have caused the active principle morphine to supplant the older galenicals of opium might be secured by applying the idea to the entire vegetable materia medica. How long has it been since any reader has read of the employment of black drop, Battley's solution, Sydenham's laudanum—not to mention paregoric and laudanum—opium and camphor and Dover's powder? Now rise up in your might and assure us that there are lots of uses for these in which they are better than morphine—and then go back to your little old hypo.

Still citing *The Medical World*, W. A. Marner gives hypodermic injections of atropine, glonoin, and strychnine, several times a day, for preventing the fits of epilepsy and to tone the digestive tract. Good combination, and well applied.

Servoss is one of the few in whose brain the therapeutic cells have not degenerated, and, in his *Western Medical Times*, an Alabamian—Doctor A. L. Nourse—actually tells of his preferring lobeline to morphine. "The uses of the drug [lobeline] are most numerous in the emergency-practice of a country doctor," he writes; and he cites the reduction of hernia and abatement of eclampsia.

Coburn (*Med. Rec.*) advises that, when morphine and atropine are administered previous to inhalation-anesthetics (chloroform, only), it should be one-half hour before operation begins; whereas, if morphine and scopolamine are employed, this should be done an hour before operating. He also pronounces nitrous oxide the best anesthetic to use in conjunction with alkaloidal adjuvants. Incidentally, we should like to know just why he employs atropine at all in preliminary anesthesias.

The Therapeutic Record ventures into the never ending battle over the treatment of pneumonia. After boldly proclaiming his belief in the possibility of aborting the attack, the author actually proceeds to recommend as old remedies as quinine (30 grains) and morphine, and to claim satisfactory results. Whereby he violates the first canon of magazine-writing—that the remedy must be one so new that nobody else has yet heard of it; for, experience is nothing in judging medicinal values, novelty is everything.

In the same publication, Babonneix credits Rogers with the amazing discovery that that ancient remedy for dysentery, ipecac, depends for its efficacy upon one of its three alkaloids. Vedder had previously determined the amebicide power of emetine employed in the test tube. Babonneix sums its advantages as consisting of its absolute innocuousness and its prompt and effectual action. This alkaloid sometimes fails, though, not always preventing relapses or hepatic abscesses; and here he finds opportunity for using arsenobenzol.

H. C. Buck (*loc. cit.*), writing from the Mississippi delta, questions whether the physicians of even the ill-famed malarial belt know everything about quinine. He cites its uses as a local application for infected wounds, in hay fever, cystitis, whooping-cough, neuralgia and skin diseases; and, internally for exophthalmic goiter and pellagra.

Turner (*loc. cit.*, quoting from *Brit. Med. Jour.*) urges quinine applications for wounds infected with the bacillus aerogenes capsulatus. The hydrochloride was used.

Ellingwood usually advises the Lloyd preparations, but, in the December number of his *Therapeutist*, Thornton tells of giving hypodermic injections of atropine for strangulated hernia. Alter (quoted from *The Summary*) gives cinchonidine, salicin, and caffeine for malariogrip; pilocarpine, to eliminate the alcohol from a "drunk"; atropine, for acute coryza; quinine, with the morphine, for night-terrors. But, then, Ellingwood exhibits, in his therapeutics, a breadth that others well might copy.

In epilepsy, Earp (*Ind. Med. Jour.*) advises solanine, in doses of 1-20 grain every hour, until the physiologic action is evident.

The Urologic and Cutaneous Review advises that previous to cauterizing a venereal sore it be anesthetized by applying a crystal of cocaine. Years ago, somebody asserted that, by mixing fuming nitric acid with cocaine, we would get a painless caustic. In several cases, we verified the assertion. The effect seems to depend upon the proportions or upon a thorough mixing.

Simon (*N. O. Med and Surg. Jour.*) asserts that cephaeline in some respects is superior to emetine for combating amebic dysenteries, and he advises a combination of the two. Cephaeline is much the more irritating.

Servoss (*Med. Summary*) says: "Those of us who have employed hyoscine in a clinical way know that it will induce sleep within a very short period. Will the surgeons *never* realize that atropine, which dissipates somnolence, is *not* the same as hyoscine?"

Bush (*N. Y. Med. Jour.*) says that, excluding agents for hemic dyscrasias, strychnine is the only drug for which there are indications in neurasthenia; being used here indirectly to accelerate metabolism. But, there is no more injurious agency that can be applied in this malady, where the feeble irritability is quickly exhausted by strychnine in the ordinary or even in minimum doses.

For tetanus Gibson (*Amer. Jour. Med. Sci.*), advises atropine for controlling the spasms. He does not specifically say so, but, the doses should be such as really will control the spasms—and that may require quantities that will raise the hair on the head of the timid book-doser.

This does not seem such a bad showing for a little bunch of exchanges on this writer's table. True, most of the citations relate to the well-known and established agents, still, they are types of the active principles in general. And similar advantages await those venturesome spirits who learn to avail themselves of the priceless virtues residing in cicutine, gelseminine, and other clean drugs that possess definite remedial powers.

Real progress does not consist in wiping out the past.—Sir Dyce Duckworth.

THERAPEUTICS—REQUIESCAT IN PACE!

The news has been flashed from Baltimore that Therapeutics is dead! The end was not wholly natural, since Dr. Johns Hopkins, despairing of the patient's ultimate recovery and desiring to end the unavailing struggle, decided upon euthanasia and administered the *coup de grâce*.

While not wholly unexpected, the sad news came as a shock to the many friends of the deceased, who had hoped that his vigorous constitution might enable him to weather the storm. In fact, many are inclined to criticize the action of Doctor Hopkins and to claim that his gloomy prognosis was not warranted by the conditions, and that the patient might, by proper treatment, have been saved for many years of usefulness. However, this does not alter the fact that he is dead, as attested by many of Doctor Hopkins' most eminent colleagues.

Neither the birthplace nor the exact age of Therapeutics is known. Egypt, India, and Irak each claims the honor of giving him birth, and Methuselah was but an infant beside him. Ages before Adam, millenniums before Chaldean and Elamite competed for the mastery over the slant-eyed blackheads of Akkad and Shoumir, Therapeutics had reached man's estate.

Kindly he was by nature, and venerated as he moved among the crowds of lesser men; always seeking to point the way men should go, yet, ever ready to assuage the distresses incurred by straying from the proper path. Over and over, times by the million, Therapeutics warned Child-Man that the fire would burn him; and, yet, every time Child-Man burnt his finger trying it, he stood ready to apply the soothing salve.

Closer to humanity he stood than ever did Priest, for, "does the robed priest for his pity falter?" Not so that you would notice; but, with Therapeutics the founts of pity never ran dry. He placed the newborn infant in its worshipping mother's arms, he soothed the aches that followed the experiments of the growing child in the field of practical dietetics, he dressed the wounds inflicted by bloody Mars and the needle-stabs from the soft hands of Venus. He stood the personification of the deity invoked by the call for help! To him, poverty and wealth were words devoid of meaning. The lamp to which he stood as the slave, to be called by a wish, was denominated suffering.

The nature of Therapeutics' last ailment is not well understood. Each of his advisers seems to have differed as to the diagnosis. One asserts that his blood was corrupted by the toxic love-of-gold that infected his body of late. Others claim that his body was covered with great horse-leeches, that had been sucking his blood until he was too reduced for recuperation. Still others say that there were hordes of erstwhile poor relations who plucked from his body every

stitch of clothing and left him exposed to the chills of age unprotected. A dark tale goes about, of starvation, through the ingratitude of those whom he had so often succored. However, the majority agree with Dr. Johns Hopkins, that his malady simply was age—that it was time that he died. A very few intimate that too much surgery was responsible, and that fifty years of tenotomies, resections, curettings, oophorectomies, decapsulations, tonsillectomies, trimmings, and the assiduous search for pus-foci proved too much for his weakened constitution.

All agree on the one salient point, that he is dead.

The people agree, too, that he will be missed. Much more might be written along this line, but I'll be hanged if any man can think up smart things, while his small daughter is practicing some darned thing that begins with: "I love my cocktail in the morning, I love it all the day," and runs off into "Poopadoodle, poopadoodle, poopadoodle," and repeats *ad infinitum* — so there!

Genius is talent set on fire by courage. Fidelity is simply daring to be true in small things as well as great. Courage is the standing army of the soul which keeps it from conquest, pillage and slavery.—Henry van Dyke.

WANTED: THE SUPERDOCTOR

Could we but wield the pencil of a gifted caricaturist, we should represent the medical profession by a series of individuals, of whom one man would be all larynx, another all appendix, a third all uterus, and yet others respectively all kidney, heart, lung, liver, skin, brain, and so down the anatomic line. But, the hereditary artistic "taint" in our blood shows itself in a lively appreciation of beauty and art, rather than in practically expressing them. All we can do is, to suggest the idea as to how the modern surgeon might be represented. Let us try.

Bit by bit this expert wielder of the scalpel has removed the various parts of the human anatomy, until the result is as figured.

The idea in our noddle struggling for deliverance is, that each of our most illustrious specialists considers the particular pet organ of the human body, upon which he has concentrated his entire attention, as the whole man. Each such specialist deduces from that organ most of the ills that beset mankind; or, if any certain ailment happens unmistakably to be located elsewhere in the body, why, then—it is, of course—a reflex from the seat of evil under his own loving surveillance.

With each of these gentlemen we have strong sympathy. We have had many instances of their correctness and have witnessed many exemplifications of their skill in treating the affections of their pet apparatuses, and the great relief afforded thereby. Possibly we incline most to those who see in men examples of the allgut or the allphallus type; still, the alleye and allovary advocates have much in favor of their views.

But, we see behind and above all of them the coming superdoctor, the common-sense man who will recognize in a sick person a human being, an entity, rather than merely a solitary organ or an aggregation of organs. This man will accord to each part of the body its due—neglect none, overestimate none. He will call upon each of the present-day Asclepiadian monstrosities to do his part, but he will himself retain the control of the man, directing the other practicians toward the best interests of the individual patient. He will be the general practician, the family doctor, in modern habiliments, with modern endowment and equipment. He will form the keystone of the medical arch.

This superdoctor can not show up too soon. He is needed right now.

The general practitioner owes it to his clientele to be on the lookout for syphilis among his pregnant women, and to subject infants to the closest examination.
—Urologic and Cutaneous Review.

ON THE TRANSMISSIBILITY OF PELLAGRA

The belief that pellagra is an infectious disease and, therefore, is transmissible, received, through the investigations of the Thompson-McFadden Pellagra Commission, a measure of support that can not be ignored because of the convincing nature of the evidence adduced by this work. Against the view that "pellagra is, in all probability, a specific infectious disease, communicable from person to person by means at present unknown", there stands the theory of a purely dietetic origin of the disease, which seemingly was demonstrated in the experiment conducted by Surgeon Joseph Goldberger, of the United States Public Health Service, in convict volunteers at a farm of the state penitentiary of Mississippi. Thirdly, there is the theory, maintained in this country particularly by Professor Perdue and in Italy by Alessandrini and Scala, that pellagra is caused principally through the agency of

drinking-water containing soluble silicates; the malady being prevalent in regions in which the water used for drinking passes through geologic strata from which it derives these offending chemicals.

Manifestly, it is premature to maintain that any particular one of these three theories explains the causation of pellagra beyond the possibility of doubt. Indeed, it seems far more reasonable to assume, as has been suggested in several editorial comments in these pages during the past year, that each of these theories attempting to elucidate the etiology of pellagra contains an element of truth and that, at least for the present, we must consider them collectively, in order to arrive at a serviceable working-theory. At any rate, it appears to have been shown definitely that the Goldberger theory, according to which the occurrence of pellagra is purely a matter of alimentation—a diet deficient in certain elements (vitamines)—is not sufficient to explain all the facts. Nor does the theory of the Italian investigators mentioned above and supported by Perdue afford sufficient grounds for justifying the assertion that pellagra is solely a consequence of perverted metabolism, brought about by drinking-water charged with silicates.

As to ourselves, the theory of the Thompson-McFadden Pellagra Commission amplified by certain additions, would seem to possess the greater degree of probability, and we believe that it is the most likely one to prevail. By this, we do not mean to indicate any belief that pellagra depends exclusively upon the invasion and multiplication of a specific virus within the organism; rather, we believe that, here more than even in other chronic infectious diseases—for instance, tuberculosis and leprosy—the presence of a predisposition to the disease is of paramount importance, provided such predisposition consists in, particularly, nutritional deficiencies. This would tend to explain the facts supportive of the Goldberger theory, showing the improper diet as a contributory cause of the disease.

The question of transmissibility, as it relates to pellagra, was recently investigated by the United States Public Health Service, and the results of this investigation were published by Surgeon Goldberger in *The Public Health Reports* for November 7, 1916. It appears from this report that the experiments were conducted with human subjects, 16 persons volunteering to this end, all of whom were between 26 and 42 years of age, one of them a woman. Among these volunteers, there were 6 physicians, who resided, respectively, in the cities of Washington, (D. C.), Columbia (S. C.), Spartanburg (S. C.), New Orleans (La), and Milledgeville, (Ga.).

During these experiments, no restraint of any kind was imposed, the subjects being advised to continue their customary habits of diet and life, while being permitted to travel freely in attending to their personal or official activities. The "infection" with pellagrous material was made deliberately in each case and no attempt was made to avoid exposure to "natural infection". Indeed, 5 of the volunteers came into frequent and intimate contact with pellagra in its natural environment, by reason of their official duties.

The materials employed for infection were blood, nasopharyngeal secretions, epidermal scales from pellagrous skin lesions, urine, and feces. The blood was administered by intramuscular or subcutaneous injection; the secretions were applied to the mucosa of the nose and nasopharynx; scales and excreta were taken into the mouth. In those experiments in which the infectious material was introduced into the stomach, care was taken to counteract any possible disturbing action of food or of the acid gastric juice by taking the material on an otherwise empty stomach, after a dose of sodium bicarbonate.

The materials, the infectivity of which was tested, were obtained from 17 cases of pellagra of various types and of different grades of severity, including 3 that terminated in death.

In the manner indicated, the infectivity of the blood was tested twice; of nasopharyngeal secretions, twice; of scales, three times; and, by reason of the alleged controlling influence of methods of sewage disposal in the propagation of the disease, the infectivity of urine and of feces was tested six times. Two or more of these tests were made on seven different occasions.

As a result of these infection-experiments during a period of between five and seven months of observation, in not one of the volunteers have any symptoms developed that would justify a diagnosis of pellagra. Consequently, Surgeon Goldberger concludes that these experiments furnish no support for the view that pellagra is a communicable disease but, rather, that they materially strengthen the conclusion that it is a disease essentially of dietary origin, brought about by a faulty, probably "deficient" diet.

By the way, officers of the Public Health Service have, in the past, very severely con-

demned experiments upon human subjects when undertaken by others. Is the morality of these experiments and their freedom from danger guaranteed when they are carried out by the Public Health Service, we wonder?

Scientific education should consist not so much in the accumulation of facts, as in the development of scientific habits of thought; in the cultivation of correct points of view; in the establishment of a state of mind in which the facts can take their proper place.—Dr. F. H. McCrudden, Boston Med. & Surg. Journal.

THE DIMINISHING VIRULENCE OF INFECTIOUS DISEASES

It is a common observation that infectious diseases are less severe at the present time than they were years ago and that it is comparatively infrequent for epidemics of diphtheria, scarlet-fever, measles, typhoid fever, and of other plagues to occur in which the diseases threaten life and demand toll in the same degree as they did a few hundred years or even five or six decades ago.

The reason for this fact is attributed to various circumstances, it being asserted by some authors that the immunity acquired after surviving a given infection may, to a certain degree, be transmitted to the offspring. The medical historian Heinrich Haeser declared that the undoubted diminution, both as to extent and severity, of epidemic diseases is a consequence more particularly of two causes, one of these being the increased resistance to these diseases with the progress of civilization. The pathologist Rindfleisch expressed the opinion that at one time tuberculosis was as infectious as syphilis, perhaps even more poisonous and malignant. By the great extension of the specific tuberculous poison, the human race has become permeated with it, and this, in turn, has produced a certain degree of immunity to tuberculosis. This also is the argument offered by Reibmayr, in his interesting investigation of the reasons why tuberculous diseases have become less virulent and deadly, more chronic than they were formerly. This view finds further support in the assertion of immunologists, that a specific immunity to any infectious disease can be acquired only by means of passing successfully through an infection with the related virus, even though it is not necessary that the infectious process must full developy the clinical phenomena and the disease be recovered from.

However plausible and reasonable this explanation may appear, the opinion recently expressed by Dr. H. W. Hill, the director of the Institute of Public Health at London, Ontario (*Amer. Jour. Publ. Health*, Jan., 1914), not only is of decided interest, but deserving of attention. Doctor Hill points out that the opportunity for a gradual development of a racial immunity to a great many infectious diseases has existed for centuries without leading to the desirable result. He also calls attention to the fact that most infections become severely virulent and dangerous to health only when the resulting lesions have become contaminated with pus-forming bacteria, through associated infection; and, finally, he expresses the opinion that it is the safeguarding against these associated infections, as it is practiced in surgery, obstetrics, and so forth, that has brought about a reduction in the virulence of the primary infections. Doctor Hill concludes:

"Although we should hold as our ultimate aim the abolition of the specific infectious diseases, it is well to remember that the chief harm that they do is due to strepto- and staphylo-cocci as secondary infections. . . . As a life-saving proposition, the abolition of strepto- and staphylococci deserves more strenuous attention than the abolition of even the tubercle-bacillus—ranking in this with the abolition of syphilis and gonorrhea."

Hill believes that the mildness of modern infectious diseases is owing to the lessened virulence, smaller stock, and reduced distribution of the strepto- and staphylococci formerly bred in our hospitals. Hence, he is of the opinion that we probably should gain immensely if all septic cases were isolated, the same as is done with victims of smallpox and other infectious diseases.

ON THE PROBLEMS OF NARCOTIC-DRUG ADDICTION

At the forty-sixth meeting of the American Medical Editors' Association held in New York, Dr. Ernest S. Bishop of that city presented some fundamental considerations of the problems of narcotic-drug addiction (*Med. Fortnightly*, Dec. 15, 1916), in which he pointed out the many difficulties that stand in the way of successfully treating such victims, most of which arise from the erroneous conception of the problem and the unjust attitude of physicians toward these patients.

Doctor Bishop declared it as his strong conviction, after years of study and experience, that he knows of no disease capable

of being more completely eradicated or more absolutely cured than that caused by the physical mechanism responsible for the untold agonies associated with the habitual use of narcotic drugs. He emphasizes that the salvation of the narcotic addict and the solution of the problem of narcotic addiction does not lie in restraint and custodial care, nor in lawmaking, punishment, moralizing, exhortation, not even in the discovering of any wonderful panacea or special treatment-method or specific, but that it rests and depends upon the education of the medical practitioners themselves. Until the medical practitioners recognize that the person addicted to narcotic drugs is not a victim of appetite, is not essentially a wanton seeker after sensuous enjoyment—until they comprehend that the narcotic addict is primarily and fundamentally a person who is ill of a definite and curable disease-condition—until they realize the importance of the study and understanding of this abnormal condition and become clinically conversant with the pathology, symptomatology, and rational therapeutics of this disease—there is little hope of the solution of our narcotic-drug problem.

Doctor Bishop wishes, above all else, to remedy the injury and injustice done to the victims of narcomania, inasmuch as they are looked upon and shunned as morally deficient or depraved, and he insists upon it that their disease is a physical one and must be treated by physical means. Consequently, he deprecates the designations "drug-habit" and "drug-fiend" as incorrect, holding that "drug-addiction" is more appropriate.

In the treatment of this disease, no one accepted routine method can be asserted to be certain to effect a cure, but the patient himself must be treated according to the physical anomalies and irregularities that may be present. This does not mean that the psychic factor is to be neglected; on the contrary, that is of high importance, particularly in cases in which the patients already have undergone unsuccessful attempts of treatment to which they had subjected themselves hopefully, only to be disappointed.

The present contribution of Doctor Bishop's does not so much aim to give information as to the treatment itself of drug-addiction as, rather, to make it clear that the general practitioner bears the responsibility for this disease and for its treatment; while, furthermore, pointing out that the duty of enlightening and teaching the general practitioner rests with the medical journals, and that it is the editors who must place the entire subject of drug-addiction upon a reasonable and equitable basis, by initiating a common-sense attitude and a reasonable and correct method of treatment.

Let a man always pay his debts and we can overlook almost any crime he may commit.—Urologic and Cutaneous Review.

ACTION OF DRUGS UPON THE ARTERIOLES

Brunton ascribed the dilatation of the arterioles to the pressure of fluid within their vessel-walls and the elastic fibers of the latter, while their contraction was produced by the muscular fibers in their coats. Dilatation, however, seems to be an active process, since it is stimulated by atropine; and this action can not be attributed to paralysis of the vaso-constrictors, but rather to an active stimulation of the vasodilators.

The nerves from the vasomotor centers induce capillary and arteriole contraction, while active dilatation is induced by the vasoinhibitory nerves.

Drugs may act in either one or the other of the following ways:

Directly: On the contractile vessel-walls, as to their muscular fibers or their motor ganglia; on the nerve-fibers, vasomotor or vasodilating; on the nerve-centers, vasomotor or vasodilating.

Indirectly: By Reflex action on the nerve-centers mentioned.

Brunton's data follow:

Lithium, magnesium, cadmium, nickel and cobalt cause slight contractions.

Barium causes rapid, calcium and strontium gradual, iron slow contractions.

Copper, zinc, and tin cause powerful contractions; so does platinum, but none in solutions weaker than 1 : 5000.

Potassium in very dilute solutions causes dilatation; in solutions of 1 : 4000, contraction.

Aluminum acts only in solutions of 1-percent strength or more.

It is not certain whether the drugs act on the vessel-walls or on their nervous elements; but a prolonged effect probably is exerted on the muscle, inasmuch as the nerve dies first.

Nicotine, 1 : 10,000, causes vessel contraction, which is only temporary; 1 percent causes immediate dilatation.

The effects of atropine are very powerful, but differ according to the dose: 1 : 100,000 induces brief contraction; 1 : 10,000 causes

contraction passing into dilatation and then return to normal; while 1 : 5000 causes primary contraction and secondary dilatation, which latter persists.

Chloral induces contraction followed by dilatation, and also increases rhythmic contractions and dilatations, or induces them when absent. It acts only upon oxygenated blood.

The complexity of the study of alterations in blood pressure and the pulse may be comprehended by the following table, taken from Brunton's work:

Blood pressure may be diminished

A. By slow heart action:
   1. Irritation or increased excitability of vagus roots.
      a) Directly by the action of the drug upon them.
      b) Indirectly by increased blood pressure.
      c) Indirectly by accumulation of carbon dioxide in the blood.
      d) Reflexly, by irritation of some afferent nerve.
   2. Irritation or increased excitability of vagus ends in heart.
   3. Paralysis of sympathetic ends in the heart.
   4. Weakness of the heart.
      a) Paralysis of the cardiac ganglia.
      b) Paralysis of the cardiac muscular fibers.

B. By smallness of the amount of blood sent into the heart at each systole.
   1. Imperfect systole of the heart.
   2. Imperfect diastole of the heart.
   3. Contraction of the pulmonary vessels.
   4. Great dilatation of the venous system.

C. By dilatation of the small arteries.
   1. Paralysis of the vasomotor center.
      a) Directly by the action of the drug.
      b) Reflexly through the depressor.
      c) Reflexly through vagus and sensory nerves, when brain is removed or animal is poisoned by opium.
   2. Paralysis of the peripheral ends, vasomotor.
   3. Paralysis of the vasomotor fibers.
      In operations, by division of the cord or splanchnics.
   4. Paralysis of the muscular coat of the arterial walls.

Blood pressure may be increased

A. By quick action of the heart.
   1. Paralysis of vagus roots.
   2. Paralysis of vagus ends in heart.
   3. Stimulation of sympathetic roots.
      a) Directly by action of drug.
      b) Indirectly by lowered blood pressure.
   4. Stimulation of sympathetic ends in heart.
   5. Stimulation of the cardiac ganglia.
      a) Directly.
      b) Reflexly by stimulation of the sensory nerves of the endocardium.
      c) Indirectly, by causing increased temperature of body.

B. By larger amount of blood at each beat.
   More perfect diastole and systole.

C. By contraction of the small arteries.
   1. Irritation of vasomotor center.
      a) Directly by action of drug upon it.
      b) Indirectly by accumulation of carbon dioxide in the blood.
      c) Reflexly through the cervical sympathetic.
      d) Reflexly through the vagus when the brain is present and the animal is not narcotized.
      e) Reflexly through sensory nerves.
   2. Irritation of peripheral terminations.
   3. Direct irritation of muscular coats of vessels.
   4. Direct irritation of vasomotor fibers.
      In operations by irritation of the peripheral ends of the divided spinal cord or splanchnics.

Be suspicious of "mild" syphilis. This is the kind of syphilis that usually brings nervous woes in later years.
—Urologic and Cutaneous Review.

THE INFLUENCE OF DENTAL DISEASE UPON LACTATION

The general lowering of health which may follow various forms of dental disease, particularly those associated with a more or less severe degree of sepsis of the mouth, has come to be fully recognized by physicians; nevertheless we doubt whether all possible inferences and lessons have been drawn from this important knowledge. It must be admitted that the influence of septic conditions of the mouth is a factor deserving attention when met with in nursing women; and for this reason a contribution on this subject by Dr. Harold Waller to *The Lancet* (Nov. 4, 1916) is of interest.

It would be an error to suppose that dental disease, although it militates against successful breast feeding, is responsible for all instances in which children fail to thrive on breast-milk. Quite often failure of lactation may be the result of a variety of other causes and factors, and it is for the physician to ascertain these. However, in numerous instances in which the child is subject to intractable vomiting either during or shortly after nursing, in which sleep is disturbed and attacks of screaming are frequent, and in which the gain of the baby is unsatisfactory, the author has learned to attach importance to the presence of oral sepsis in the mother, although he finds that mere questioning about the condition of the teeth seldom affords enlightenment. If, however, the inquiry is directed to the metastatic effects of oral sepsis, positive evidence will be given unsuspectingly.

Thus, it is common to be told that the woman in question is rheumatic and is subject to recurrent sore throat, that "her head troubles her" or that she always wakes in

the morning with a bad taste in the mouth. Attacks of neuralgia, stiff neck, swollen face or "gumboils" are sometines admitted. Indigestion, vomiting, loss of appetite, and a decline in weight and strength are symptoms often mentioned spontaneously.

Examination of the mouth suggests most strongly the probable etiology of many of these complaints. A superficial inspection often makes it obvious that good general health is not possible with the conditions there found. Caries of long standing, dead teeth, broken roots regarded as harmless and often covered by plates, the openings of sinuses from which pus can be expressed in quantity, loose teeth and a copious discharge arising from their alveolar insertions—all these are of common occurrence. A chronically infected state of the tonsils must necessarily be added to the list. It is, unfortunately, common to hear that such patients have for years relied on medicinal remedies for their debility and anemia.

Presenting greater difficulty, but often of equal importance, are the cases where elaborate architectural devices have been built up and where the mouth contains a number of gold-crowned teeth; for, despite their cleanly appearance, they do not always, as a matter of fact, rest upon sound foundations. The very form of their construction sometimes serves to imprison disease that has progressed beneath. So, also, may the costliness of their erection prove a serious hindrance to their alteration or removal. In such cases, the knowledge of an expert and impartial dentist may have to be supplemented by skiagrams before the point can be settled.

In contrast to the frequency with which internal disturbances in nursing babies may be traced to existence of dental disease in the mother, Doctor Waller lays stress upon the fact that digestive disturbances and intestinal disorders are very infrequent in breast-fed infants whose mothers have perfect teeth.

If the removal of dental disease is carried out adequately, even if this has given rise to a severe disturbance both in mother and child, improvement in the mother's health is sufficiently rapid and substantial to be of signal benefit to her babe. In order to definitely establish the causal relation, the author proposes as criterion that, after proper treatment of the dental disease, the rate of gain in the child's weight should be accelerated and the length of time over which nursing can be carried out should be prolonged. Further, the mother should become aware of an increase in the flow of milk.

How interest in these focal infections, so called, is growing! No physician called upon to treat a case of rheumatism, arthritis deformans, myalgia, neuritis, endocarditis, or other painful disease of obscure origin can now afford to neglect the careful physical examination so long insisted upon—too often academically—by the great clinicians. It is encouraging that we are now looking more closely for *causes*—encouraging, also, that this search is giving us a more satisfactory therapy.

The average ureometer may permit an error of as much as 50 percent. Don't forget this in estimating the urea output.—Urologic and Cutaneous Review.

A THERAPEUTIST'S VIEWS ON CANCER

Dr. L. A. Merriam, of Omaha, has had a peculiar experience: he has formulated a well-formed theory on the causation of cancer and has been refused publication of its presentation by some of the leading medical journals of the United States. The very fact that he has dared to entertain views differing from those now prevalent, would seem enough to entitle him to a hearing in the pages of any medical journal. As a matter of fact, there is a somewhat tedious similarity or, rather, identity in the views of nearly everything of late being printed concerning cancer.

Laboratory-workers, societies for the study of cancer, in fact, all of the recognized authorities on that subject seem to agree in one thing, namely, the urging upon the patient of the earliest possible resort to the surgeon. "Do not wait until you have any pain. Do not wait until the cancer shows any signs of activity. Do not wait until your suspicion is aroused that the growth may be a cancer, but rush to the surgeon and have the thing out." But what if the cancer return, as it does do, as a rule? O, well, then the patient did not have the growth cut out early enough.

So far as we can recollect, Doctor Merriam's is the first attempt we have seen within recent years, to put the shoe upon the other foot—that is, to say flatly that the reason why an excised cancer returns is, because, while the local affection was removed, no efforts whatever were made to remove the influences that originally gave rise to the neoplasm. Like causes producing like results, the reappearance of the cancer under like conditions seems almost inevitable.

Before deciding for or against Doctor Merriam, however, first let us see what he has

to say on the subject. Take this passage, to start with:

"The primary cause of all disease is from within, autointoxication, a poisonous blood stream from wrong methods of living, too much food of certain kinds and too little of other foods, improper combination of foods, and the failure to eliminate or get rid of waste matters.

While most of us are not prepared to go quite so far as Doctor Merriam in attributing every disease of the human body to the cause named by him, we will all admit that a good deal of disease is thus caused; also, that the medical profession is becoming more and more imbued with this truth and tends to ascribe more and more disease and suffering to this cause. Doctor Merriam continues:

"In the epithelial parts of the body, there is a liability to revert to rudimentary forms of cell-life, wherein the epithelial cells reveal their power to act as independent units, their spontaneity or self-governing properties."

But what is the cause of this reversion of tissue and of cell-life?

"We have seen that in this reversion of structure and, therefore, of function the cells retreat to broader grounds or traverse in a retrograde course the various steps they have come through in their process of development.

"Hence, we see in cancer a degenerative or perverted type of cells or arrangement of cells. That this condition is primarily caused by any form of germ-life, there is no evidence whatever. Germs cannot live and do harm to the human organism when the blood stream is normally pure, life-energy sufficient and harmonious. For, then the tissue resistance in the body is able to withstand the onslaught of any and every kind of germs."

Does anybody feel like controverting these statements? To us, they look reasonable. Now let us see what argument Doctor Merriam deduces therefrom:

"When the chemical or electric forces or energies are impaired and the blood stream is overcharged with waste matter of tissue change and foods, especially if meat is eaten in excess of the requirements of the body, and when the normal food-salts from fruit and vegetables that are so necessary in body building, tissue repair, and assisting elimination of waste chemical substances are very deficient in quantity or largely absent (as often happens), then chemical and electric changes occur that induce many forms of disease; and this is especially true in cancer."

Some things naturally suggest themselves to him who endeavors, in all things, to occupy a judicial attitude: First, can Doctor Merriam prove this latter statement? Second, can his opponents disprove it?

"Physicians have made too much of the so-called germ-theory of disease and have neglected the chemical and electrical changes in the body resulting from improper feeding and faulty elimination."

With this statement, at least, we are in hearty accord. Accepting fully the germ-theory and all that springs therefrom, we still are in constant protest against the neglect of the study of physiology now prevalent in the entire profession. Over and over again CLINICAL MEDICINE has urged upon the profession the importance of so studying the physiology of the human body that the very first departure from normal activity of any of the functions shall be detected and the cause of such departure removed.

Further on Merriam says, "To the chemistry of the blood, we must look for the essential cause of cancer, and, as I have contended for years, it lies very largely in eating too much meat and too little fruit and vegetables."

This is a matter of opinion and still more of observation. Everyone of us can satisfy himself, by investigating our own cancer-cases, as to whether in his case, at least, this is true. It happens that we have not as yet encountered upon this point any facts adduced to antagonize Doctor Merriam's statements. He says that the general opinion is, that when the flag of danger appears the tumor is to be cut out radically or x-rayed; then there follow several (as a rule) successive operations for reappearances of the neoplasm, until at last the patient is a wreck from the use of the surgeon's knife or he succumbs. And all this is because the patient has not been taught correct feeding and care of the body, to bring about the return of perfect health.

The treatment advocated by Doctor Merriam in general is as follows:

He does not condemn operation, but says, if there be a protoplasmic mass, a proliferating focus, it often is well to remove it at once; then, by a purification of the blood stream and the removal of the conditions which caused the cancer, nature will be all-sufficient to effect a cure. The x-ray is inferior to the knife and only allowable in the early stages—it is of "great value" to operator and hospital. "But, if they would follow up the case, by teaching the great and essential value of a pure blood stream and correct the pathological conditions, it would be of incalculable value to the patient."

Doctor Merriam does not hesitate to say some hard things about his opponents. The

Anticancer Society, organized in 1913 and representing a large number of medical societies and many persons of high standing, was formed, as the program says, to conduct a worldwide campaign to teach the great value of early operative intervention. This effort Doctor Merriam assails as pure commercialism, and nothing else.

There is this much of truth in Doctor Merriam's contention, that, as a rule, the surgeon demands early, earlier, and still earlier operation, until one has to ask how he possibly can determine that he is dealing with a cancer at the extremely early period of development at which he demands his being called in? More than this—when he is through with his operation, he stops. Who ever heard of any surgeon making a study of the physiologic condition of his cancer-patients and seeking to regulate it along the lines suggested by Doctor Merriam? In truth, we may take this plea as one for the rehabilitation of the internist, for his association as an important and essential part of the staff treating the cancerous patient. Let the surgeon remove the growth, the earlier the better; but then let the internist take his place, in an endeavor to prevent a recurrence of the malady.

As to the condition of things which Doctor Merriam describes, the excessive use of meats, the toxemia from purin-bodies and other waste products, and a deficiency in the needful nutritive principles derived from the vegetable world, we will admit that such a diet is essentially wrong and that Doctor Merriam is justified in insisting upon the importance of placing such a patient upon a correct diet. As to whether this in itself will produce the good effects asserted by Doctor Merriam, time must show. At any rate, it will be useful to the patient to adopt such a diet, while it will do him no possible harm. Hence, we adopt Doctor Merriam's suggestion in this, that we should pay more attention to the physiology of our patients, and, yet, we accept fully the Anticancer Society's dictum as to the earliest possible operative treatment.

Observations made some years ago in Chicago go far to verify Merriam's position. It was found, as many of our readers will remember, that cancer was prevalent among the various nationalities forming our cosmopolitan citizenry in exact proportion to their use of certain meat-products. For instance, the Germans use more meat than does any other race, especially in the way of sausages and other forms in which inferior qualities of meat might be disguised, and, of the Germans in Chicago dying over the age of forty, one of every four died of cancer. The Scandinavians were a close second. The Chinese living almost exclusively on rice and the Italians living on macaroni showed the least prevalence of cancer of any races.

We are sorry that Doctor Merriam saw fit to add what he has to say as to the influence of suggestion, in the latter part of his paper. We all know the value of suggestion. We all know the good effects of a confident assertion to the patient that he has a chance of being cured. Many of us could give striking examples, of the value of suggestion in the treatment of ills and infirmities. But, that anyone should in any degree rely upon suggestion for the cure of cancer is enough to put that one out of court at once.

How much better it is to tell such patients the exact truth. Say to them that there is reason to believe that an improper mode of life, especially as to diet, lies at the root of the formation of cancer and that, when the cancerous tissues have been eradicated, so far as is possible, by operative intervention, there is some reason to believe that a correct mode of living may go far to prevent its recurrence. This itself is enough to induce any reasonable being to adhere to the rules which the physician lays down. The present writer has always found that the plain truth, stated in unmistakable terms, goes further with the patient than the utmost exaggeration could do. A positive statement of facts, avoiding wild optimism on the one hand and gloomy pessimism on the other, will appeal to the individual far more than the extreme on either side. This writer never has failed to retain the confidence of his patient by saying to him distinctly: "I do not know whether you are going to recover or not; but, I do know this, that I shall use every resource known to the science of medicine to cure and, if I fail to cure you, then to keep you here as long as possible and as comfortable as possible while you live. For you I will make the hardest fight of which I am capable, but the result lies in the hands of a higher power than our own. Please God, we hope to succeed." He has yet to have a patient turn him down or to neglect to follow his instructions when this perfectly plain speech was made.

In our review of Doctor Merriam's paper, we are inclined to think that his rather brusk onslaughts against operator and commercialism, and his rather vivid advocacy of suggestive methods, were the reasons for the refusal of medical journals to publish his paper, rather than any opposition to the method of treatment which he advocates.

Leading Artieles

Ambulance Hospitals On the Battle Line

By B. Sherwood Dunn, M. D., Paris, France

EDITORIAL NOTE.—Every physician is interested in the European War, therefore every reader of "Clinical Medicine" is sure to enjoy Doctor Dunn's first-hand description of some of the problems with which surgeons are dealing in the French hospitals and on the battlefields. This is the first of a number of papers which Doctor Dunn has promised to send us.

THIS paper is more a story of personal experience than a medical article, nevertheless, it will give certain indications for a line of procedure, by surgeons at first-aid stations, that were born of this experience and which may be of prime importance to our home surgeons should they be called to service. The great war now raging is being fought by methods and means totally different from those heretofore known and which will compel the complete revision of all our textbooks for army surgeons.

The chivalry, honor, and high traditions of warfare chronicled in modern history are all put at naught, to give place to asphyxiating gases and bombs, the projection of flaming liquids, tear-producing shells, explosive bullets, the poisoning of water supply and food abandoned to the enemy. Anything to destroy is the accepted practice in this war. Then, too, this new trench form of fighting revolutionizes all known army tactics and ushers in a new era of warfare.

The cavalry arm, which in former wars played such an important part in turning the enemy flank, is now practically useless, until one side has been driven from its line of trenches into the open in retreat. In the place of the cavalry, we now have the "tanks," those ironclad fortresses on wheels which lumber across "No-man's Land," striking terror to the hearts of those in its way, straddling a trench and clearing it with machine-gun fire, then calmly going on to the next, and finally returning to its base after accomplishing its mission, apparently impervious to the bombs, grenades, and gun-fire of the enemy.

The chateau constituting the field lazarette to which I was sent for service at the front is located in the French trenches at the third line, which latter runs by only a hundred feet from the building; all protected by barbed-wire entanglements and dotted with bomb-proofs, where the cannon will be placed in case of retreat from the preceding lines.

The first morning I awakened to the roar of artillery along our front; which, it seems, is ordinary, and they say is the method of the two armies bidding each other "good-morning." The country round about is very beautiful, well wooded, with autumn leaves showing their multitude of beautiful colors, and it is almost impossible to imagine this beauty and peaceful outlook to be in the midst of the panoply and watchful vigilance of war, surrounded by unsuspected thousands armed and ready to respond at a moment's notice to the call to battle. There is something about it that stirs the pulse and fires the imagination with a pervading sense of enthusiasm; that fills the heart with a willing sense of sacrifice, as if life itself were little to lose in a cause which inspires your country's call; all of which, I suppose, is comprehended in the word patriotism.

While dressing the first morning I heard, coming from the main country road, the martial music of many trumpets, and, going to a window commanding the roadway, I saw a company of Algerian trumpeters on horseback and behind them coming, as far as the eye could reach to the brow of the distant hill,—where they looked like toy-soldiers—company after company of calvary, four abreast, many hundreds, even thousands. They were an hour in passing our quarters, and I forgot my breakfast in watching the inspiring sight.

The Battle in the Air

All about our quarters are posted rules and prohibitions, one of the most prominent being: "Ask no questions, answer no ques-

tions." We may not walk in certain directions nor beyond certain points. One rule is, that when an aeroplane is in sight one must immediately seek shelter under a tree or hedge or in a building.

While the staff were at lunch, we heard guns in our near neighborhood, and an orderly

Fig. 1. First aid station close to the field of action.

came in to say that a German plane was coming our way, chased by one of our monoplanes. Did we stay under cover? Every man rushed out into the open, until a crowd of more than twenty, some with field-glasses, were gathered to watch the combat. The German evidently had come over our lines for observation, and two of our planes rose at once to chase him. The noise of their motors and planes made a roar plainly heard. The German being higher and having that advantage, opened fire on his pursuers, but they cannot well manage guns trained to the rear, and he, evidently, caused no damage. But now a new element became manifest—the German was well over our first lines and our air-guns opened on him. We first would see several little white clouds burst into view against the sky's clear blue, as the shrapnel shells burst in a row, followed quickly by repeated detonations of the canon, as the sound traveled to us, then, later, the crack, crack, crack of the bursting shells high in air, like fireworks on the Fourth of July at Coney Island. At first the shells burst high above the German, then below him, and then around him, some so near as to seem to us he must be destroyed; but he began the usual maneuvers to outwit the gunners: he began to spiral up and down and zigzag, to make their aim ineffective, but, finding the reception too warm for comfort, he turned about and flew back, and our planes turned, as they still were low, and glided off to each side, to be out of the range of the guns following the German from below when he would fly back over them. It all occupied only a few minutes, but furnished a most interesting experience about aerial maneuvering.

Scenes and Observations at the Front

The work at the front is markedly different from that I became accustomed to at Pau. There, a long way from the theater of war, the patients had come out of the various conditions of exaltation, demoralization, furor, and shock, and were presented in fairly normal conditions. But, here, coming direct from the field, they present varying and oft-times startling phenomena that must be taken into consideration; and this has a pronounced bearing upon their immediate treatment. Sometimes, anesthesia is dangerous in the presenceof abnormal mental symptoms.

During the morning, an officer was rushed in with what the ambulance-driver said was a crushed-in skull. He had been kicked by his horse, and a ragged, lacerated wound extended from his hair to his eyebrow. He was suffering from profound shock, and when it was found that he had only a slight fracture over the frontal sinus we put him to bed with a first-aid dressing, to wait until it would be safe to administer an anesthetic. Later in

Fig. 2. Transporting the wounded by train.

the day, when he was anesthetized, he was in the opposite condition—a state of extreme exaltation—calling to his men to charge, urging them on with cries of encouragement and patriotic fervor.

Another man brought in during the afternoon said, while being helped out of the

ambulance: "I am all right, it's only a slight wound." He was hit by a rifle-ball at the crest of the ilium. The ball slid across the external surface of the bone and came out at the fleshy part of the buttocks; one inch further forward, and it would have gone across the inner instead of the outer

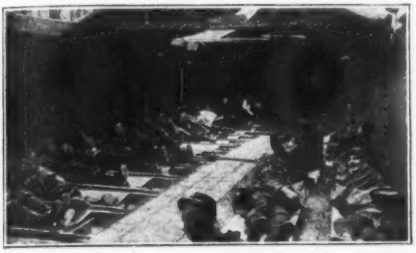

Fig. 3. Transporting the wounded by boat.

table and thus entered the abdominal cavity.

One of the positions near us is on a hill and so exposed to the enemy that the wounded can be brought to us only in the night. So, our work is never done: it is practically night and day work.

All day yesterday and all night and as I write, the heavy guns along our front are roaring continuously, and one of the officers quartered with us predicts that it is a prelude to an attack—by which side, we do not know. We never are told until our position is in danger. Twice we have evacuated the hospital on an hour's notice and moved all the inmates to the rear, several miles away.

The regimental band visits our post once a week, and better technic for a small band of only 35 pieces I have never heard. Paris is robbed of all its bands; all the music is with the army. War made to music—curious, isn't it?

Today the Duke of Rohan, representing one of the oldest of the French noble families, stopped for dinner with us. He is a captain of cavalry and has been at the front nineteen months. He was with his troops at the battle of the Marne, and he told us that he did not have his boots off for eighteen days. He is a fine-looking, big-chested, robust man of, I should say, thirty-five; an intelligent and charming "raconteur." His country seat, one of the celebrated show chateaux of France, is being used as a hospital, as is also his city mansion in Paris.[1]

All rules are ironclad and enforced to the letter. One day I was compelled to get down from our ambulance and wait at the barrier post, because I had left my "laisser passer", and, although the barrier guard knew me and my post and occupation, he would not permit me to pass because of the lack of this paper. We are compelled to produce our pass on every trip, for, there is no telling as to the reason why or the moment when one's pass may be cancelled and recalled.

I was sent here to take the place of a surgeon away on leave, and when he returns, on whatever day, I must report to the War Office for another assignment. Our function is, to care for those seriously wounded. All those who can be moved are sent to base hospitals in cities near the point of evacuation. We have twelve women nurses, and I cannot speak too highly of their devotion and self-sacrifice. No matter what hour of night or what interference with meals, they respond to any call to duty without a murmur. The part played by women in this war ought to be written in a separate history.

A very short experience at a front-line hospital changes one's estimate of human character in general. I have seen many men die, but I yet have to find one who at that moment made a scene. They meet their fate stoically and as becomes a soldier, and no greater evidence of heroism can be imagined than is exhibited by some men at that final moment.

Most of our surgeons who went out with the army and during the early months were

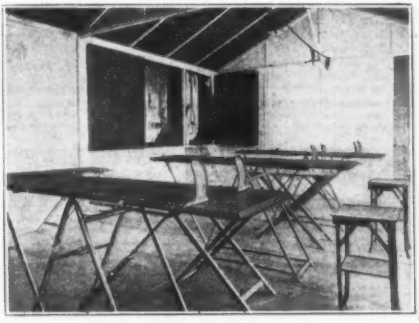

Fig. 4. Frames and canvas set up forming a room ready for operation.

called to service in front-line hospitals were imbued with the teaching that their function was, to douche the wounds with iodine-solution, apply a first dressing, then let things go until the wounded man arrived at some base hospital for operative treatment. The result was, that the first months of the

[1] This nobleman has been killed in battle since this article was written.

war saw countless cases of gaseous gangrene, tetanus, and widespread and often fatal infections.

During the early months, the hospital-organization, conveniences and equipment were imperfect, inadequate, and without connected or cohesive organization. As the army was pushed rapidly back, the surgeons found themselves separated from their supplies and equipment. Tents, cots, stretchers, and apparatus were scattered, and the wounded had to do with a temporary first dressing of some kind, until they could be conveyed to a fixed point. Soon, however, experience corrected all this. Field operating-rooms on wheels, automobile sterilizing apparatus and supplies, lorries carrying tents and beds and equipment were on the field, and today no better field ambulances (hospitals) can be imagined than those behind the French army.

In a recent paper by Professor Schwarts, who went out with the first troops, he relates the experience of all the surgical corps, with few exceptions, which was, that they all went with absolutely false notions about war surgery.

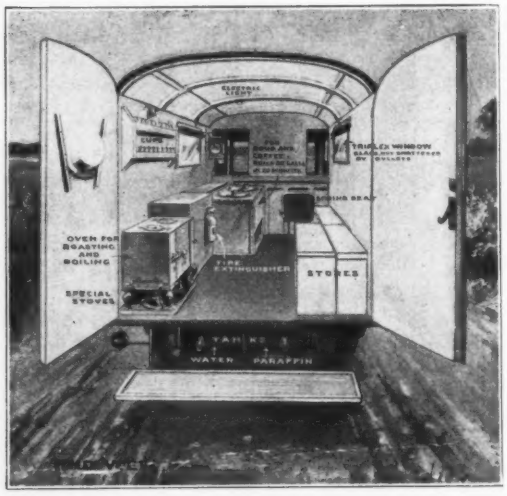

Fig. 5.

SCIENTIFIC CULINARY ARRANGEMENTS FOR THE BENEFIT OF WOUNDED MEN: THE INTERIOR OF THE RED CROSS MOTOR FIELD-KITCHEN

The prompt supply of nourishment in the shape of hot soup or coffee and so on, especially in cold weather, is an important part of the work of tending the wounded on the field, and this 35-h. p. motor field-kitchen has great advantages from its mobility and its scientific equipment. It can carry, in the side-boxes underneath the car, 3 cwt. of concentrated meat extract, enough for 500 wounded men for four days. The store-boxes inside the car on the right, and the folding seat, with a mattress placed over them, can be used as a sleeping-place. The Allies' Field Ambulance Corps is doing excellent work under the direction of Miss Jessica Borthwick. Funds are needed, and could not be given to a better cause.

Wound Treatment Is Radically Changed

To begin with, the fixed idea was universal that operative surgery could not be practiced in the war-zone. The order written in the standard textbooks and published records of recent wars prescribed that no operating should be done in the field hospitals. This probably was based upon the fact that heretofore the great majority of wounds was made by bullets. In this war, army maneuvers are replaced by confinement to trenches and fixed positions. Rifle-fire having been replaced by artillery shells of numerous kind, the nature of the wounds has changed completely as to their aspect and gravity, and they not only demand immediate treatment, but a treatment totally different from that in former wars; and this applies particularly to visceral wounds and those of the cranium. In former wars, the bullet-wound was more or less benign. In this war, the fragments from shells, grenades, torpedoes, and shrapnel carry into the wound earth, pebbles, splinters, bits of clothing (always dirty), and hair of the integument, all of which are immediate exciting causes of infection. To all of this, there must be added the irregular form of the shell-fragment which bruises and mangles the flesh, and creates what soon becomes dead tissue and forms an ideal nidus for infectious processes.

The reader can readily imagine what follows the temporary dressing of a wound produced by any projectile other than a rifle- or machine-gun bullet. The wound, in place of being a cleancut track, is a cavity filled with torn, ragged tissue, foreign particles, and usually metallic splinters and coagulated blood. No matter how liberally the wounded man be douched with iodine, it does not penetrate to all the recesses, and the contamination rapidly progresses to infection.

It can readily be seen that to practice the therapeutics set down in our textbooks, in the presence of such conditions, serves only to invite disaster. To put a temporary dressing upon such a wound, no matter what may be the precautions, is simply to close

the door to a hothouse of infectious processes; thus entailing in its train the fatal consequences so often encountered at the beginning of the war—gaseous gangrene, tetanus, and septicemia—with the result that the surgeon is compelled to sacrifice limbs, when prompt and efficient treatment at the outset would have aided in a speedy recovery.

The New System of Handling Wounds

In what does this prompt and efficient treatment consist? First of all, take it for granted, and proceed upon the assumption, that every wound made by any projectile other than a rifle or machine-gun ball is contaminated. The first thing to do with such a wound, no matter where it is found, is, to open it widely by such incision as will best expose the cavity and damaged tissues in their entirety. There is no danger of doing this too liberally; the great danger and common fault is, in not going far enough and making an insufficient opening.

If the projectile has passed completely through the tissues and out at the opposite side, then open widely both orifices in such manner as to clean out the track of the projectile thoroughly, removing, not only all splinters of bone, shell, foreign matter, and blood clot, but cutting away all the tissues showing such evidence of damage as leaves the least suspicion that they may die and slough away. It is infinitely better to cut away some good tissue than to leave any that will become bad tissue.

The practice of enlarging the entrance and exit of a projectile as little as possible and then irrigating the track and passing a drain through is bad practice; but even worse is that of introducing a drain into an opening which has no exit. The liberal incision extending down into the center of the traumatism and long and wide enough to search its innermost recesses is the greatest insurance for changing a contaminated cavity into a favorable seat for healthy granulations. The larger the cutaneous incision, the wider will be the opening of the cavity, which is the one great essential for completely and minutely cleaning it of all foreign and doubtful matter and leaving the wound to a healthy recovery.

To the fullest extent possible, the operator should explore any bleeding part, to see whether it is caused by a piece of projectile, and he should do his best to find and extract the same. A field wide open under the eye will, often, make it possible to trace and extract particles of projectiles without the aid of the radiograph. The importance of this is better understood and appreciated by the surgeon who knows that he is at the moment far removed from an x-ray outfit. Moreover, even with a field hospital equipped with this convenience, it happens quite often that the press of work renders the employment of this aid impossible. During intensified periods, when from 100 to 200 wounded a day pass through the operating-room of a motor ambulance, surgeons cannot stop to x-ray the patients.

The cleaning of the wound often can be facilitated by a flow of warm salt-solution or sterilized water. If this is not conveniently to hand, open wide the lesion and clear the field to view by means of tampons of gauze, in place of the water.

A distinction must be made between a fresh wound contaminated but not yet infected and a wound of longer standing that has progressed to a state of infection.

The advice to resect bruised, mangled tissues, as well as to remove all foreign substance in and connected with a wound, also applies to fresh wounds. If they have advanced to a stage of infection and suppuration, then we must be satisfied with a careful and thorough cleaning of the wound and a wide opening for drainage, in the direction of gravity whenever this is possible.

Another and vitally important factor that makes it incumbent upon the front-line surgeon to do his work thoroughly and largely and to lay open rather too much than too little is, that frequently the wounded men remain only a day under his charge; for they are removed, in order to make place for the fresh patients constantly arriving; being sent to the first base hospital, where again they often remain only long enough to be conveyed to the interior. Hence, with the time consumed in transport and the intervening short periods of rest at hospitals, it sometimes is ten to fourteen days before they really are located where they can receive practical and studied care. Thus, it will readily be seen that, if these wounded have not been subjected to a careful and thorough cleaning of their wounds at the hands of the first-line surgeon, these are likely, by the time they arrive at a fixed hospital, to have progressed to a degree of infection that will entail months of treatment to overcome.

Where the patient has received the thorough opening up and cleaning out of his wound, with the surface thoroughly gone over with tampons soaked in hydrogen peroxide and the cavity packed with gauze and bound with a well-applied bandage—one that will

withstand the vicissitudes of handling and transportation—the patient frequently will arrive at his final destination still wearing his original dressing, which, in the absence of a fixed rise in temperature, will remain untouched at the different points of surgical observation; and even then it is not infrequent to find, when the dressings are removed, a condition of beginning healthy granulation.

Antiseptics for Wounds Are Obsolete

During the early stages of the war, antiseptics were in universal use. They now are as universally avoided. At first, every wound was douched with every variety of antiseptic liquid; now the rule is, to keep the wound as dry as possible, while the gauze drain has pretty generally supplanted all others. Packing all open wounds with dry gauze, changing daily when suppuration exists, opening widely every sinus and packing again with gauze, gives the best results.

The continuous irrigation, after the method of Carrel, with the solution bearing his name gives most excellent results, but it requires more or less expert handling and great care in the preparation of the solution, so that this method has not won general favor.

To sum up, I believe that the experience of the surgeons in this war has demonstrated:

First: The earlier a wound can be subjected to treatment, the better is the chance of a successful issue.

Second: Every wound caused by a projectile other than a rifle- or machine-gun bullet should be widely opened, thoroughly cleaned from all foreign materials and débris, and every fragment of metal should be removed; all bruised, mangled tissues should be resected; the walls, tract, and base of the wound should be left as clean and sound as possible.

The cavity should be swabbed out with hydrogen peroxide (if with anything), carefully and firmly packed with sterile gauze, after which it is perfectly and permanently bandaged.

By this treatment, every wound is transformed from a tract or sinus into a cavity, with a wide opening that insures ready and complete drainage and guarantees in the greatest degree the preservation of the life and members of the patient.

Third: A wound thoroughly cleaned out and carefully packed with gauze, in absence of a characteristic temperature indicating infectious invasion, should remain untouched for a week. Redressing a healthy wound at frequent intervals, subjects it to unnecessary danger and retards its recovery.

Atropine, The Imperative

By A. L. Nourse, M. D., Sawyerville, Alabama

EDITORIAL NOTE.—It is in accordance with a peculiar psychological truth that, with the aggressive and decided opposition to drug therapy, coming from high quarters, the large and wide possibilities of well selected drugs properly applied are recognized and emphasized more emphatically by practitioners, men who are engaged in actual struggle with disease. Doctor Nourse relates some very interesting facts from his wide experience with atropine.

TO the nightshade family, we are indebted for several therapeutic agents of value, among them solanine, derived from the potato-vine. This alkaloid always must be thought of in spasmodic conditions having their cause in an irritation of the outer brain; often being a far better selection than the bromides in these cases, both as to the immediate as well as the end results. But, the most important solanaceous agent is atropine, from atropa belladonna, or deadly nightshade of Europe. This plant now is being cultivated in this country to a limited extent, and let us hope that soon it will be another American product, as a result of the war awakening us to our own possibilities. The other prominent members of this group of alkaloids are: hyoscine and hyoscyamine from henbane, scopolamine from scopalia, and daturine from stramonium. All these are very closely allied chemically as well as therapeutically; in fact, the similarity of the active principles of this group is such as to require, in some instances, delicate tests to differentiate them. All members of this group are intensely poisonous, and all are characterized by being mydriatics. Atropine has the greatest individuality of action of any of the related principles.

Perhaps it is safe to say that the saving of more lives is due to the intelligent use of atropine than to the employment of any other single remedy. Conversely, it is to be presumed that many useful lives might have

been prolonged had there been a prompt and understanding answer to the imperative call for belladonna or its alkaloid. In a word, with any beginning congestion, the remedy indicated is atropine, or, since the mother-plant does not carry a complexity of active ingredients that would render the whole drug action radically different from that of the main potent constituent, the tincture of belladonna instead, abating congestion by bleeding into the arterioles.

In fixing in mind the picture of the atropine-patient, the one leading thought is, congestion, and the necessity of "bleeding" the patient into his own capillaries. If the congestion is in the cerebrospinal axis, the call is doubly imperative. Here, often, exhibition of the drug to effect will save the patient from meningitis or other evil results of stagnated circulation causing mechanical pressure, with its harmful result on nerve-termini, as well as preventing waste and stimulating repair, which latter is possible only with a normal and rapidly moving blood current. Of a truth, with recent brain congestion, the primal thought is, to get the excess blood away from the very center of physiological force direction. The now despised bloody phlebotomist was perfectly right in principle and theory; the only difference is in the refinement of method on the part of his successor, the practicer of "bloodless phlebotomy," who has the knowledge that shows him the practicability of bleeding the sufferer into his own periphery—a procedure which the enormous capacity of dilated capillaries renders possible. This he does by using his selected vasodilator, while at the same time assuring himself of sufficient cardiac impulse to carry the blood into its extended field and keep it in motion. There is no reason for doubt that colds and even exanthemas frequently are aborted by this equalization of the circulation.

Disease resistance is raised, the parts being kept busy attending to the ebb and flow of the blood, in its double function of life-giving and somatic scavenging. Thus, the parts are kept too well occupied to get into mischief resultant upon stagnation and germ breeding. Given a good current of normal or slightly accelerated movement, and a satisfactory opsonic index, and the disease-resisting power of the organism is immense. It is well to bear in mind that, with few exceptions, where the corpuscles themselves furnish the habitat (as in the malarial plasmodia), disease-producing organisms require débris-collection from faulty metabolism in order to multiply. With a properly rushing current, nature will usually care for everything not extravascular in structure.

Other Uses of Atropine

Next in importance to its function as a disease aborter through circulatory action is the use of atropine as a mydriatic. This and its homolog homatropine (with its briefer effect), are at the head of the limited list of cyclopegics, and they are used in ophthalmology in the correction of refraction errors and to prevent iris adhesion. But, where deep hemorrhage exists, it holds a very high place. Hemorrhage must be checked by increasing thromboplastic action (adding to the blood stream power of coagulability), by local vasoconstriction, and by relieving pressure at the source of the hemorrhage, be the bleeding occult or manifest. Atropine is, above all others, the remedy for the latter purpose, unless, of course, some special contraindication be present. In an emergency of whatever kind, except when the bleeding is from vessels requiring surgical measures, atropine is rarely found wanting—giving the large doses, say, even 1-60 grain, in extreme cases, and adding glonoin if the effect must be hastened. Try these two drugs in a dangerous postpartum hemorrhage. In this condition, as well as in acute brain congestion, the large dose is justified.

In passive hemorrhage, such as oozing of blood from the bowels of infants and in certain functional metrorrhagias, the minute dose should be given every fifteen minutes to effect.

Except in emergencies, the rule of giving powerful drugs in fractional doses, thus more closely adjusting dosage to needs, holds good for the administration of atropine especially.

Belladonna is an old drug and much has been written upon it and atropine, but no apology is made for the selection of the subject. There will not have been enough written about this lifesaver and ever available help to the practician until its importance is fully and universally recognized. It is to be feared that there still are some physicians who use atropine only because its is said to make (as it usually does) a good addition to a hypodermic of morphine, or maybe for its cyclopegic value.

There is no active principle presenting more marked points for study than does the one under discussion; this despite the similarity of action and chemical structure with other solanaceous derivatives.

The physiological action is, to check gland secretion—except that of the liver, pancreas, and kidneys—with resultant extreme dryness

of the throat. This point must be watched for, to indicate its full effect. Mydriasis is resultant upon local application to the eye or pushing the drug internally to effect.

The Dosage of Atropine

Peristalsis is inhibited by full dosage, the reverse being the result of fractional ones. Ordinary dosage strengthens the heart's action, both by decrease of inhibition and increase of accelerator-nerve action. The mydriatic result is also caused by combination of inhibition and acceleration-motor-oculi inhibition of the sphincter fibers; sympathetic acceleration of the radiating ones, thus relaxing the ocular curtain and drawing it in. Redfield has called attention to the fact that mydriasis lasts long after death and that an enucleated animal eye is responsive to atropine.

Aside from the effects obtained, directly and indirectly, in equalization of circulation, the drug should be considered as having specific and selective action on the nervous system, thus rendering it important in spasm control and in the sedation of certain nervous and mental conditions; its value exceeding in indicated cases that to be expected from its known physiological action.

Atropine is quickly absorbed into the circulation from the intestine, but only slowly from the unbroken skin. After exerting its action, it is eliminated practically unchanged, mainly through the kidneys. This chemical entity must be recognized as a potent one, when its mere presence in the blood will, by some unknown method of catalysis, cause its conspicuous effects upon the functioning of the nerve-centers and termini for which it has affinity. It may be that a portion of the minute dosage of the drug does exert other than this catalytic action (undergo true chemical change), but so far this is not proven. Local mydriatic effect is said to occur from one-half millionth of a grain, and certain it is that those who deny other than a suggestive effect from the use of the homeopathic potencies choose very often poor fighting-ground when selecting belladonna as the field.

Just why it is that this compound—as also many others—racing through the blood in infinitesimal amounts will immediately exercise a selective and powerful action, while amazing tolerance of other substances prevails, some of them having perceptible chemical action, is shown, is a mystery. But, one desiring to demonstrate the power of atropine can readily do so. Step into the butcher shop and get the eye of an animal, to try one of Redfield's experiments. This, or take some of the urine of a patient under the physiological effect of the little solanaceous molecular aggregation and drop it into a cat's eyes; then observe the distressing photophobia which the animal exhibits at its inability to contract the pupils to the usual daylight slit when facing sunlight.

When the thought and mental picture of congestion comes to the mind, then in addition to the relieving agents there must also be considered both the question of contra-indications and the advisability of employing either some synergist or modifying remedy. The close student has the advantage of the research of his predecessors and contemporaries, always modified by the possibility of a wrong conclusion or an error in observation, but, he will never forget that he himself is the final authority when it comes to judgment in the selection of a remedy and adjustment of its dosage; also, that there is more to be found out.

The Numerous Uses of Atropine

In our present state of knowledge we may say that atropine can be accepted as being useful in the following conditions:

Certain spasmodic manifestations, "busy deliriums," and in many symptoms and symptom-groupings having local congestion or nerve irritation as a cause.

In exanthemas, to bring the circulation to the surface, thus aiding in the determination of the eruption; in scarlatina, the relief to the congested kidneys being of untold value also. (Not possessing any means of knowing immunity in advance, the claim as to the prevention of scarlatina can not be proven, but many make this claim.)

In pyloric spasm which is often relieved.

In congestive dysmenorrhea, where its efficacy is marked, the result being hastened by an initial dose of glonoin.

Epistaxis requires a trial with atropine before plugging the nares.

Orchitis and ovaritis are favorably influenced, pulsatilla being a good synergist.

Night sweats frequently yield when all else has failed.

Otalgia and otitis may be relieved by a few drops in the ear of a solution of 1-2 to 1 percent strength, in conjunction with its internal use to effect.

In mastitis, used externally and internally.

For terminating lactation, used in the same manner. *Caution: The child must not be given the breast.*

In heat-exhaustion, with prostration, its early use is imperative.

In true sunstroke, it relieves congestion of the brain.

In coryza and the entire group of respiratory disorders, its early use may abort.

In the feverishness of children, its use, with or without aconitine, may result in no other than a tentative diagnosis being either made or needed.

In incontinence or in retention of urine where caused by local circulatory disturbance or spasm, especially in children, it is useful. [But, in the aged, atony of the sphincter is aggravated by belladonna and its active principle, according to Nascher.—ED.]

Whooping-cough and asthma are benefited, but combination with other remedies usually is desirable. Atropine, lobeline, apomorphine, and thyme are drugs of choice with many—these and the recently added Bordet vaccine.

In headaches of the restless sleeper and others, frontal in character, especially if the pupils are dilated or slow of light response, extremities cold and patient inactive. Also if thirsty but unable to drink, and carotids pulsating—*headache from congestion.*

In congestion of the abdominal viscera, where the patient complains of the slightest jarring or motion; even with peritoneal involvement.

In typhoid fever, frequently throughout the disease, to relieve local internal congestions.

It aids dilatation of the ureters or bile-duct in the passage of calculi. Is an excellent addition to lobeline in these emergencies.

In upset of the cerebral circulation from alcohol. The worse the patient's condition, the more emphatic the indication.

It is an important aid in erysipelas, especially the phlegmonous form—here is local stagnation.

As an addition to other dressing of lesions of *small* area (as, chancroids) it locally stimulates capillary circulation, and gives sedation to the afferent nerve-termini.

"Slobbering" or ptyalism is checked by it.

Cold feet, whether a prodrome of disease or just the "cold feet" of poor circulation, may be relieved by it.

In dry, tickling cough, it often is helpful.

Nephritis, both acute and chronic forms, will often get pronounced aid—diuretics being sometimes overworked, when the indication is to relieve local congestion.

In the depressant poisons we have a general indication. In "toadstool" poisoning; where the fungus is one of the muscarin-carrying agaricaceae, life often depends upon its timely use.

In point of quickness of action, "restoratives" might be considered such as amyl-nitrite inhalation first, forcible rectal dilatation next; then glonoin with atropine following, and maintaining the effect. This applies to too much chloroform inhalation and many other conditions.

Atropine is a sharp tool. But we prefer the surgeon with sharp instruments; and who returns to a barber who uses a dull razor?

It is not to be forgotten that in emergency usage of this drug, particularly as an antidote, caution must be observed to avoid too quick repetition of a large dose—in overdose it is itself a poison and unexpected reaction may be too intensive. *Action upon the right side of the heart of too much atropine is dangerous.*

Antidoting Overdoses

Calabar-bean is a direct physiologic antagonist of belladonna. Physostigmine (eserine), the typical myotic, is the active principle of calabar-bean. It is just opposite to atropine, which is a mydriatic and has the reverse action in every way. Pilocarpine is the nearest parallel to eserine in physiological action, even to myotic manifestation.

Lobeline is another drug in many ways directly antagonistic to atropine, yet, in many instances is found preferable for accomplishing the same result. Why? Because physiological action has a double control, by acceleration and inhibition of the same function. Hence, does the stimulation of one center have the same effect as inhibition of the other in many pathological conditions.

Here, too, is an explanation of the reverse action of different dosage of the same drug; in one amount, inhibition may be stimulated; in the other, depressed; the same being true of the accelerator action. However, the illustration may be objected to, upon the ground that reverse action of different quantities of the same drug usually is caused by the degree of influence on the same center, instead of upon those having opposite action.

Use for atropine is more likely to be found in patients of plethoric type, because in these, congestion is more frequent, they suffer more from localized pressure; there is less ability for equalization of circulation without aid to nature.

Although important in certain chronic disease-conditions, I consider the drug's greatest value to be in emergencies and in disease onset.

A Study of Aconite

By H. J. Achard, M. D., Chicago, Illinois

[*Continued from January issue, page 37.*]

ACONITE is one of the favorite remedies of homeopathic physicians, which fact may find its explanation, not only in the undoubted beneficial action exerted by the drug in conditions associated with disturbed circulation—more particularly during the onset of acute inflammations—but also in the other fact, that the favorable results of small doses repeated at brief intervals until the effect is manifest are so evident after the administration of aconite under suitable conditions as to be characteristic.

The principle upon which this use of the drug rests was supported by Burggraeve and has now found more general acceptance; the tendency of modern therapeutics undoubtedly being toward small and frequently repeated doses. In the case of aconite, this principle is of the greater importance, as the drug is destroyed in the system very rapidly and, consequently, must be frequently repeated in order to maintain the effect.

Official Preparations of Aconite

For the purpose of local applications, the preparations from the root of the aconite-plant, made in accordance with the U. S. Pharmacopeia or the National Formulary, are, particularly, the oleate of aconite and the liniment of aconite and chloroform. These preparations may be applied to the inflamed skin. It is necessary, however, to remember that the skin of children and of women is far more permeable than that of men, and, above all, one must make sure that the skin is not injured in any way, for fear that excessive absorption of the drug might take place. J. T. Cash (*Brit. Med. Jour.*, 1902: No. 2181, p. 1243) recommends for local analgesia an ointment of the alkaloids of aconite, prepared as follows:

Aconitine (cryst.).....Gm. 1.0 (grs. 15)
Acidi oleinici.....Gm. 4.0 (grs. 60)
Dissolve with the aid of heat and add.
Adipis.....Gm. 20.0 (grs. 300)
Prepare as an ointment.
For external use.

For the internal administration of aconite, the tincture of the root is the form employed most generally, but there is no doubt that the crystallized form of aconitine is superior to the tincture of the crude drug, because of its greater uniformity of strength, keeping-quality, and, consequently, action. As was shown earlier in this study, tincture of aconite loses its strength very rapidly, this deterioration manifestly making it unsafe for general use. A further drawback is, that the tinctures of aconite of the different pharmacopeias differ as to their respective strengths and that even succeeding editions of the U. S. Pharmacopeia have changed the formula in this respect; the present official tincture being three and one-half times weaker than that formerly directed. It is a fact that serious results have followed the administration of tincture of aconite, in doses that in former cases had been found satisfactory and safe, but the family-druggist happened to have lately replenished his stock (either of the tincture or of the crude drug), a fact not known to the prescribing physician.

Likewise, the commercial aconitines have produced variable and uncertain effects, and this may have contributed to bring the drug into disrepute, as being uncertain and dangerous. Thus, if a sample of commercial aconitine contains, not only the amorphous alkaloid, but also japaconitine and picraconitine, its toxic action will be much greater in proportion to this admixture. The amorphous aconitine itself rarely has been found to be pure and, therefore, cannot be depended upon as fully as had been assumed up to some years ago. It is for these reasons that the opinion frequently is expressed in the literature that the crystallized aconitine is the most dependable preparation of the drug, a conclusion that is in accord with the experience of many practitioners.

The granules containing crystallized aconitine, that probably are employed most widely in this country, have the decided advantage of containing only 1-800 of a grain each of the alkaloidal salt (the hydrobromide), thus making it possible to administer a dose of the remedy at very short intervals until the desired action, remedial or physiologic, has been secured, without running the risk of giving an overdose.

Given in this manner, aconitine is one of the most easily controlled drugs, while, in the case of the tincture, or other crude-drug form, it is impossible to foretell how much is required by a certain patient before results can become manifest or what would constitute a maximal dose for any particular patient. Since aconite is of particular value in the treatment of children, with their labile heat-regulation, the advantage of having small-

dosed and reliably apportioned granules of the crystallized alkaloid is still further emphasized.

The Dosage of Aconitine

In prescribing aconitine for children, Shaller's rule of dosage is applicable; namely: Dissolve one dosimetric granule for each year of the child's age and one additional granule in 24 teaspoonfuls of water, and give 1 teaspoonful of this solution as a dose.

For example: For a child 4 years of age, dissolve 4 plus 1 (that is, 5) dosimetric granules in 24 teaspoonfuls of water; the dose, as stated being a teaspoonful, repeated as may seem indicated.

In all febrile conditions in which aconite is indicated, 1 granule of 1-800 grain may be given every fifteen to thirty minutes, until the pulse softens and the fever falls, or until neuralgic pain becomes less, after which the intervals between doses are lengthened, according to circumstances. If tingling of the lips, the tongue or the extremities is felt by the patient or if the physiological effect of numbness is experienced, the drug should be suspended until this sensation has passed away.

Preparations of aconite should be washed down quickly with a drink of water, or else be given well diluted, in order to prevent its peripheral action from manifesting itself in the mouth and throat.

Because of the rapidity with which aconitine is destroyed in the system, the necessity of small but frequent doses is evident.

Contraindications

According to George F. Butler, aconite always is contraindicated in subacute or chronic conditions or when the heart's action is weak. It is also not tolerated in catarrhal conditions of the stomach, which it aggravates. Nevertheless, it is possible to afford the patient the benefit of aconite even if his heart is weak, by combining it in a suitable manner with supporting tonics, such as strychnine or brucine, or with heart-remedies, digitalis, for example.

Combinations with Other Drugs

The combination of aconitine with digitalis and strychnine was first suggested by Burggraeve, who called it the "dosimetric trinity." This combination is of particular service in patients in whom the pulse has a tendency to be small and weak or where the tissues are greatly relaxed. In other conditions, particularly in those characterized by a hard, bounding pulse, a combination of aconitine with digitalin and veratrine is indicated, because under the action of the veratrine the pulse will soon become softer, while the aconitine, assisted by the digitalin, exerts its lowering action on the fever and quiets the excessive work of the heart.

According to the various uses to which aconitine may suitably be put, other combinations have been devised. For instance, among these are: A combination of atropine sulphate, gr. 1-1000; codeine sulphate, gr. 1-64; quinine arsenate, gr. 1-32, and aconitine hydrobromide, gr. 1-800. This is of service in acute "colds." Or colchicine, gr. 1-128; aconitine hydrobromide, gr. 1-128; strychnine arsenate, gr. 1-128, used as an "antirheumatic," especially in the early febrile conditions of acute arthritis. Or, quinine valerate, gr. 1-3; aconitine hydrobromide, gr. 1-800; hyoscyamine sulphate, gr. 1-1000. This has been found to be an efficient antineuralgic.

These and other combinations may serve certain purposes; it is far better, however, as well as safer, for the physician to make his own combinations as they are required. With the reliable and exactly dosed granules that are available, the physician can easily extemporize any combination that may seem to him most appropriate for any given case and under particular circumstances, dispensing or ordering the several granules of a combination to be taken at one dose (contained in a capsule, if he so choose), or making up a solution sufficient to provide for the doses required until his next visit.

Various makes of French granules of crystalline aconitine are recommended by different writers. While these French preparations are excellent, and are correctly made, we do not believe it necessary any longer to go across the water for our alkaloidal granules, since they are made and readily obtained, pharmaceutically and pharmacologically perfect, in our own country.

Indications for Aconitine

In general terms, the therapeutic indications for aconitine have been expressed tersely by Burggraeve when he said: "Aconitine is the moderator of the vasomotor nervous system. It reduces fever, lowering the temperature to the physiological level; that is to say, it increases the arterialization of the blood."

The first indication of the drug undoubtedly is presented by inflammation associated with fever, and it is the remarkable action of aconitine under these conditions that has given rise to the positive assertion made by

many physicians, that it is possible to abort or jugulate certain well-defined febrile processes, among which may be named, more particularly, socalled "colds," also certain forms of pneumonia. J. E. Tibbens, for instance, claims that aconite is not only invaluable for the jugulation of pneumonia, but in every disease that ends in "itis" and in which the temperature runs high; excepting cases of asthma. And this view is supported by Sydney Ringer, who calls the power of aconite to control inflammations and to subdue the accompanying fever remarkable.

Ringer also found that aconite sometimes will cut short an inflammation, and, although it will not remove the products of the inflammation, yet, the drug will prevent the inflammatory products from developing further, and thus save the tissues from additional injury. For this reason, aconite is of more conspicuous service in the earliest and early stages of inflammation, and it is under these conditions that the possibility of jugulating febrile diseases has been recognized and established.

It may be said here, parenthetically, that Ringer lays particular stress upon the frequent use of the thermometer, and he counsels the suspension of the drug when an excessive fever-temperature has been moderated to within safe limits.

According to George F. Butler, aconite seems to exert a peculiar beneficial influence upon the mucous membranes, acting favorably, therefore, in all acute inflammatory conditions of the throat, bronchial tubes, and intestinal canal, when they are characterized by fever, by a small, weak pulse, and by rapid cardiac action. In addition to its property of reducing fever and slowing the pulse, Gustavus Eliot refers to the associated action of relieving aching and restlessness, promoting perspiration, and diminishing the overaction of the heart in inflammation and fever.

[*To be continued.*]

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By George F. Butler, M. D., Kramer, Indiana

[*Continued from February issue, page 124.*]

Other Causes of Constipation

CONSTIPATION in the large intestine is induced by nearly the same conditions as in the small, namely, deficiency of action, which in turn may depend upon deficient secretion; still, deficient innervation is the more common cause. There may be large fecal accumulations, and this may depend upon insufficient nerve-power, either in the colon or the rectum.

One of the severest forms of constipation may depend upon conditions in the rectum alone; and, unless the greatest care is exercised by the practitioner, a rectal abscess may develop. In such a case, the patient may feel little need of emptying the bowels; he has small power or none at all to expel the fecal accumulation, and, unless effective treatment is at once begun, serious results must follow. Chronic inflammation about hemorrhoids is among the usual causes of this state. Continued inflammation of any part (especially in or about the mucous membrane) is productive of deficient nerve response to local stimulation or irritation, and a relaxed condition inevitably follows. Prolapse of the rectum is very likely to result from this low state of innervation.

Constipation from this cause induces low spirits in the patient, and sometimes insanity; which states, however, are relieved when the rectal wrong is righted.

Use of Enemas

In the treatment of rectal constipation, the first necessity is, to empty the rectum and keep it empty. One method of removing fecal accumulations is, to administer an enema—with caution. It should never be given as a routine measure, repeated continuously; for, in that event, the patient, becoming habituated to this manner of clearing out his bowel, would have great difficulty in dispensing with it even after his restoration to health. It is in forcing a quick emptying of the lower bowel that the enema is chiefly valuable.

I am not a believer in the ordinary enema, as I think it does harm. I use the colonic flushings, by putting into the colon from 8 to 16 ounces of physiologic salt-solution or of a sodium-bicarbonate solution and then allow it to syphon off, repeating until from

1 to 2 gallons of the solution have passed. This can be done every day or on alternate days. At night, I have the patient inject from 1-2 to 1 pint of sterile cottonseed-oil or olive-oil, this to remain until next morning. This is given every night at first and then on alternate nights, and afterward, as necessary, for many weeks.

Glycerin Enemas

Though glycerin suppositories are probably of more value than enemas, glycerin is much used for rectal injection. In a good proportion of instances, it has an admirable effect, a retained injection of 1 to 2 drams producing free movements in from five to twenty minutes, and, as a rule, painlessly. Glycerin appears to exert its best results when the rectum is massed with fecal accumulations; and it has been widely employed in Europe in doses of 20 drops for the constipation of infants. Although it has been known to occasion some irritation of the rectum, it has promptly relieved constipation in a great majority of cases. When in adults the intestine is obstructed, try an enema of glycerin, 1-2 ounce.

From 1 to 3 drams of liquid petrolatum at bedtime, is a good and simple enema for, clearing out the lower bowel. A pint injected very slowly, so that it will be retained a little while, will be found very effective, whether the impaction be in the rectum or higher up. It softens the mass and is quicky ejected along with the acccumulation, upon which, perhaps, other measures have brought no results.

Strychnine, injected into the mucous tissue, is to be depended upon almost exclusively in these cases of rectal constipation whether the cause be hypertrophy of the membrane, due to long standing hemorrhoids, or mere inability of the rectum to expel its contents. It is also valuable when, for any cause, there is prolonged cystitis. Elderly men with an enlarged prostate gland suffer in a greater or less degree from cystitis, and, because of deficient innervation—they are always likely to have accumulations of fecal matter in the lower part of the bowel. Therefore, in the treatment of any form of cystitis, but especially that which accompanies enlarged prostate, if the patient complains that the evacuation from the bowels is small, while the movement does not completely empty them, they should be cleared out thoroughly by means of enemas, after which strychnine should be injected. This method will naturally relieve most cases of the kind.

In the other forms of constipation, where there is a tendency to the formation of scybalous masses, the usual location of these accumulations is at the upper part of the rectum, and somewhat less commonly in the transverse colon. They come down into the sigmoid flexure only when dislodged. These are the cases in which mineral waters may be employed to advantage, their effect being to loosen the masses without depressing the patient, and to prevent new accumulations. The Congress or the Kissingen waters are good, alone or together; but either belladonna or stramonium in the shape of suppositories should be used in addition—the water in the morning and the suppository at night. An excellent remedy in these cases is liquid petrolatum, perferably in the form of Petrochondrin (Abbott). This is a palatable and efficient remedy in these cases.

If mineral waters are not to be had, the same purpose can be attained by magnesium sulphate (effervescent) in a full glass of water. In fact, my own experience goes to indicate that a dose of such an effervescent saline laxative in the morning before breakfast acts as well as the best purgative mineral water.

Faradization along the tract of the colon is as beneficial as in treatment of constipation of the smaller intestine. Also the hip-bath may be serviceable, but not so much so here as when the small intestine is chiefly involved.

The employment of enemas should be avoided, except when it is desirable to remove fecal accumulation near the anus, the effect of overdistention of the intestines being bad. As a single overdistention of the bladder lasting no more than eighteen hours may be followed by a life-long weakness, a single overdistention of the intestine may seriously weaken its normal rhythm. However, when other measures have failed, the liquid petrolatum will usually prove effective.

Constipation Following Febrile Diseases

An accumulation of feces in different parts of the intestinal tube is a common complication in patients recovering from a disease in which fever is a leading element, such as pneumonia. The reason for this is, that fever tends to suppress the intestinal secretions.

Scybalous accumulations were not very common in the days when fever-patients were given drugs intended to eliminate the poisons through the bowel; but now that the treatment is conducted on a wholly different plan the febrile condition may continue as a direct consequence of fecal accumulation. But, by the use of a proper cathartic, the forming

of such a mass may be prevented or, if formed, be thus removed; and probably the best means to accomplish this is, to give some saline laxative, preferably magnesium sulphate. These agents hasten the discharge of the serous elements into the intestine, aid absorption of deposits in the lung (in pneumonia), act upon the kidneys as well as the bowels, and, meet the indications more fully, perhaps, than will any other cathartic in use.

Constipation Due to Deficient Bile Secretion

A greasy, sallow skin marks this form of constipation. Combined calomel and podophyllin is given in these cases, as also where there is irritation of the rectum. A tendency to hemorrhoids calls for small doses of juglandin, or euonymin, or the compound licorice-powder.

Nervous Constipation of Women

Constipation in women sometimes arises from suppression, through reflex irritation of the ovarian plexus, of the peristaltic movements of the intestine. This also causes cold feet, the irritation contracting the arteries of the legs. Also, the back may ache. Applying heat to the feet and giving atropine together with a small dose of colocynth often will mend all these conditions.

[To be continued.]

The General Practitioner in His Relation to Practical Psychiatry

By L. E. Duval, M. D., Washington, D. C.

EDITORIAL NOTE.—Under existing conditions of our rushing and intense business- and social-life, it is unavoidable that the nervous forces, which are so closely connected with the regulation of the motive power of our various bodily functions, are put under an unaccustomed and severe strain; in consequence of which diseases of the nervous system and of the mind have become increasingly frequent. Doctor Duval's vivid description should be of immense aid to the general practitioner in recognizing the early signs of possible oncoming mental irregularities—"forewarned is forearmed."

THE general practitioner of today must be an all-around specialist. Every branch of medicine is developing more or less rapidly and the general practitioner must keep pace with these developments, or he soon finds himself far behind the times and outclassed by those who are of more progressive type than himself. The average general practitioner does try to keep informed, and he is usually a good internist, an obstetrician, a gynecologist, and more or less of a surgeon. But, there are certain branches which he is likely to neglect, and one of these —an important one—is mental disease and mental hygiene. How many of my readers, I wonder, have stopped to consider that there *is* such a thing as mental hygiene?

The subject of mental diseases is a rather difficult and to many men an uninteresting one. Nevertheless, it is a branch of our art which we can little afford to neglect. By far too many persons every year are sent to insane-hospitals, who might have been saved had their family physicians understood their cases.

First and foremost, the physician should train himself to recognize those who are potential mental sufferers. He should be able to distinguish the person who is a constitutional psychopath, or, "constitutional inferior", as some psychiatrists term a certain class of individuals who are not unintelligent, but are unable to adapt themselves to any surroundings or station in life or to meet varying conditions which fate may bring to them.

Every physician should be able to recognize the psychopathic personality, the man or woman who gets along satisfactorily until he or she is called upon to meet some one of the vital problems of life and then goes to pieces. He should be able to recognize the boy or girl who is liable to develop into a precocious dement or a depressive maniac and to advise them as to their proper mode of life so as to avoid a mental breakdown. If a business man of his acquaintance begins to engage in wild-cat schemes and to show a progressive failure of judgment, the medical adviser should at once think of certain forms of mental disease that begin in this manner and which render such a person an undesirable member of the community. The physician should know something about the paranoid states; for, these cases are among the most dangerous of all insane persons, while often being intelligent and presenting a good general appearance. Then there are the

neuroses, the hysterias, and neurasthenias. The average practitioner is, literally, "up against it" when he meets one of these, and, yet, if he knew the symptoms of their incipient stages and something about the real etiology of these troubles, how many hours of heartache and suffering he could avert.

But, first he must have a good background of normal psychology, else he can not hope to recognize the beginning deviations from normal, which constitute the really important symptomatology, of these diseases, to be recognized. It is not within the scope of this paper to deal with normal psychology. The reader is referred to the many good books on the subject. What I purpose to consider here is, the study of the individual who deviates from the average (a better term than "normal", since we have no set standard according to which we may say that a given person is or is not normal), and to show in what way we must deal with such a one. It frequently remains for the general practitioner to determine whether or not a mentally abnormal should or should not be confined in an institution. Moreover, if such person is a potential murderer or suicide, as often is the case, it is vitally important that the fact be recognized in time.

One fact must always be kept in mind in dealing with cases of mental disease; namely: that we must consider the patient not as an individual, disconnected unit, but, rather, in his relation to society as a whole. The good of the community must always take precedence over the wishes or convenience of the individual. I cannot emphasize this proposition too strongly. This aspect has been pointed out by a number of prominent authors, but, I believe that ordinarily physicians are too prone to think of these patients in terms of the individual instead of considering them as biological units, a part of the social organization.

If a man commits murder, society deprives him of his liberty. Many subjects of mental disease are potential murderers—and the proverbial ounce of prevention is a good thing to remember in such cases. Then, there are the sex-perverts—how many they number, one does not realize unless he has an opportunity to come in contact with them in institutional work. Their crimes against society are punished according to code, and then they are set free, only to repeat them. Some of these can be helped by the psychiatrist, but the majority of them should be kept under institutional care all their lives. It is the general practitioner who has the first opportunity to recognize these perverted people and to direct them into the proper channels. These two conditions are but a small proportion of the cases of mental aberration for which the general practitioner should be on the alert.

There are many such patients who can be helped much, even cured, if treated in time, and it is for the general practitioner to see to it that they *are* taken in time.

Many of these cases begin with physical ailments that only are symptoms of the graver mental disturbance underlying them. The physician may be able to diagnose a hysterical paralysis, but he forgets that this is only a manifestation of some deep-seated mental trouble and that he has not effected a cure if he restores motor power to the paralyzed leg or arm by means of electricity, massage or what not. He merely has cured a symptom —the disease itself still is present. A case of this kind is one that calls for psychanalytical methods, and is not, as a rule, within the scope of the general practitioner to treat, both by reason of the time required for such treatment and because of the special ability required for proper management. However, when a general practitioner recognizes such a case, he can direct the patient to someone who is properly qualified to treat him and to save him months, possibly years, of unnecessary suffering.

Prevention of these mental disasters should be the general practitioner's greatest part in practical psychiatry, for, mental disease is far more easily prevented than cured; and, when one realizes the large percentage of the mental diseases that are absolutely incurable, he begins to realize the immense importance of mental hygiene.

What I especially wish to emphasize in these articles is, not so much the symptoms of mental disease after it is fully developed, as the symptoms which indicate a threatening mental breakdown, the form of disease to which they are liable to lead, and the prognosis of the disease if taken in hand in time. I wish to awaken the reader, as said, to a sense of the responsibility which confronts him in these cases—the importance of prevention. When a case is frankly one of acute mental disease, it passes from the province of the general practitioner and no longer is appropriate for treatment outside of an institution.

The Constitutional Inferior

The literature on this subject is, as yet, limited to occasional articles appearing in the journals, and to brief mention in some of

the newer textbooks. My own conception of the subject is based, from the theoretical standpoint, upon an article by Henry M. Friedman, acting assistant surgeon, U. S. P. H. S., ("The Constitutional Inferior: a Survey") and, from the practical point of view, upon observation of patients admitted to this institution.

As good examples of the constitutional inferior, we have the chronic pauper, the beggar, the hobo, and their like. They are those who, to quote the article just mentioned, "are just under extreme adversity, but never quite above it; who are incapable of meeting their own demands in life, and, what is more significant mentally, are not concerned about it." The condition is essentially a degeneration—the individual is defective in one way or other. It may be very difficult to determine where the defectiveness lies. It may be mental, moral or physical, and one must know what to search for, or he is liable to fail in his search.

Under the heading of *physical* defectiveness, we have all the numerous physical anomalies. Many normal men have some one anomaly, but this signifies nothing. It is the constitutional inferior who exhibits in his body several such. Because a man has a harelip or adherent lobules of the ears, we have no right to say that he is a defective; but, if in addition to these he has cryptorchidism and perhaps several other deformities besides, we are justified in suspecting that he is an inferior in ways other than physical. If such a one happens to be fortunate enough to be in good surroundings and under proper discipline, his inferiority may never become patent. But, if the latent-inferior meets some problem of life which he is unable to solve, then his inferiority will manifest itself by a psychosis or some similar reaction, as, for example, alcoholism or even suicide.

Under the heading of mental degenerates, we not only include those who show deficient capacity for learning, but also those who manifest defects of judgment and of the other mental faculties. These people may get along well enough in the coarser occupations but they never rise above "hewers of wood and drawers of water". They are unable to "keep pace with the progress of" or to "contribute anything to society," to quote Friedman. You may educate them but they are unable to use their education to practical purpose. But, often the attempt to educate them may precipitate a mental breakdown; for, there is a very definite level to which the inferior may rise, while an endeavor to rise above this level is liable to be dangerous to the individual's welfare. The more the degree of defectiveness, the greater the chances are that some definite psychosis will develop. Especially is this true of the præcox type of individual, to which I shall refer later.

Often one must study the individual for a long period of time before one can determine definitely that he is an inferior. One feels that the individual is not normal, but it is difficult, perhaps impossible, to lay one's finger on any particular aspect and say, "There the trouble lies." In such a case, one must simply study the patient long and carefully before saying definitely that he is normal or not.

There is a long list of mental stigmata which one may find in the inferior, singly or combined, examples of which are faults of perception; lack of foresight, initiative or imagination; faults of judgment and of personality; and so on. And related to these individuals are those who show moral defectiveness, such as the pathological liars, the prostitutes (though these are likely to be mental defectives in the usually accepted sense of "mental defectiveness"), and all the rest of those who are lacking a sense of right and wrong in exactly the same manner as an idiot lacks intelligence. They simply have no moral sense, so, are not responsible for their offenses against society.

These individuals may have some particular talent well developed, such as music or mathematics, but their defectiveness is evident in other ways. In a brief paper like this, it is difficult to give a good description of this condition, but I think I can best illustrate it by a typical case which came under my observation in this institution recently.

A Practical Illustration

A man about 40 years of age was admitted to the criminal department of this institution, from the federal prison at Ft. Leavenworth, where he was serving time for impersonating a federal officer. His family history shows that one maternal uncle was insane, his father is an alcoholic and now suffering from apoplexy, and his mother died from tuberculosis shortly after confinement. He had several brothers and sisters, all dead from causes unknown to him. So, here, as in most of these cases, we have defective heredity as a basis. If we could delve further into this man's heredity, we doubtless should find still other psychopathic determinants among his ancestry.

As to the patient's personal history, we know nothing about his birth or the prenatal period. He had a very brief school-life and it was very difficult for him to learn. He can read and write only the simplest words. When he left school he tried to learn the stone-mason's trade from his father, but made a failure of it. All his life he has been a common laborer, and owing to his roving disposition has "hoboed" from place to place, working a little here and a little there, but never for more than a few months in any place. He had several jobs that paid well, even earning as high as 5 dollars a day as a watchman, but he could not be contented in one place, so, would leave and satisfy his wanderlust. When the Spanish-American war broke out, he enlisted as a volunteer, but was dishonorably discharged, at the end of six months, for drunkenness. Since that time, he has several times enlisted in the regular army, under his own name or an alias, and each time has been tried for fraudulent enlistment and served time for it.

It is quite typical of this class that they show such poor judgment and lack of moral sense. He knew that the offense of fraudulent enlistment was a crime, but he says he always was under the influence of drink when he enlisted.

This man has been a periodic alcoholic since boyhood and practically always gets into some trouble when drinking. He has used cocaine for nine years, beginning its use in a hobo camp. His sex-life also is quite typical. At the age of seven, a sister took him into a closet and tried to perform a perverted sexual act upon him. At the age of fifteen, he began to have normal intercourse with prostitutes. He has been a masturbator and also admits being the passive agent in homosexual acts when under the influence of drink. He admits having had gonorrhea, soft chancre, and perhaps—although he is not sure—syphilis. (There is no evidence of syphilis, except a scar on the penis. The Wasserman reaction is negative.) In his present psychosis, syphilophobia is a marked feature. He also admits sexual inclinations toward a half-sister and that he has fondled the genitalia of her young daughter.

He has been married twice, each time to women of decidedly doubtful character. The first marriage ended in his deserting the woman at the end of two months; the second, after two years. The first marriage was obviously a total misfit. The second was happy, but not sufficiently so to prevent him from yielding again to the wanderlust. He never gave a second thought to the outcome of the first marriage. He sometimes worries over that of the second, and wonders whether the woman ever secured a divorce or not.

He has had typhoid fever, malaria, and sustained a severe burn of both feet by rolling into a hobo campfire while drunk. These burns deformed the feet badly, making locomotion very difficult and painful.

The offense for which this man now is serving time occurred over a year ago. He cashed a check in a restaurant by representing himself as a federal officer. He evidently did not carry it out very cleverly, for, he was arrested almost immediately and sentenced to the federal prison at Ft. Leavenworth for eighteen months. Soon after beginning his sentence, he began to show evidences of mental difficulty and a prison-psychosis of the dementia-præcox type made its appearance. Among other symptoms are, visual and auditory hallucinations. Voices accuse him of many things (most of which have some foundation in his past life). Syphilophobia and delusions of persecution with reference to a fellow prisoner also are present. The psychosis still is present though the symptoms are less marked.

Our study of this man showed him to be of a decidedly hypochondriacal makeup, rather depressed, but quiet, agreeable, and accessible. He has some insight into his condition, realizing that his mind is not right, and he also realizes that he has always been different from other men. He says: "Seems like I never have been right, somehow. Everything goes against me. I can't stay satisfied with anything." He is correctly oriented in all spheres, but his memory is poor both for recent and for remote events. The intelligence tests gave rather poor results. Physically, his face is attractive. He is well developed. He shows rounded scars on the lower extremities, which probably are syphilitic, and a scar on the glans penis. Otherwise, the physical and neurological examinations gave negative results; so did examinations of the urine and the Wasserman tests.

The Moral

Here, then, we have a man who has never been able to adapt himself to any sphere of life or to any surroundings. He has fallen easy victim to all the vices and to crime, and has not seemed to realize the gravity of his offenses against society. He dreads leaving this institution and facing the world. He feels secure here, where he is under discipline

and has physicians and attendants to turn to for everything he needs. He knows that when he gets out he will, sooner or later, come in conflict with the law, and would much prefer to spend the rest of his life under our care.

Unconsciously this patient teaches us what we should do with the class of constitutional inferiors. They will do their best work and be useful individuals only under institutional care, with its regular hours and discipline. At present, we have no institutions for these people, except as they become insane or commit some crime. We ought to have institutions for the care of those who do not come under these two classes.

Another moral to be drawn from such a case as the above is this: These cases should be discovered early, but this will be made possible only by close, accurate observation of every individual in his formative period. His teachers have the first and best opportunity, his employers the next. The child that is different from other children, who does not care for play, who tends to be seclusive, or one who is a prodigy—such are examples of those whom we should observe closely.

Once the inferior is discovered, care should be taken to see to it that he is put into the proper surroundings, in order that future troubles from antisocial acts may be avoided and that he be prevented from propagating his undesirable kind. In proper conditions, he may become more or less useful and self-supporting. In other conditions, he is an expense to the community and a constant source of trouble.

As I have said before, that saying about "an ounce of prevention" is especially applicable with regard to the problem of mental hygiene.

Lobelia, Its Field of Usefulness and Dosage

By C. W. Canan, M. D., Orkney Springs, Virginia

EDITORIAL NOTE.—Lobelia is a very interesting drug and one the therapeutic possibilities of which are only now coming to be realized more fully and more correctly. It promises to be a reliable means of relieving many distressing conditions associated with muscular spasm. Doctor Canan's helpful article is certain to interest our readers and equally certain to be of benefit to them and through them to their patients.

SEVERAL physicians have written and asked my advice, saying that they cannot adjust the dosage of lobelia, since in their hands the drug often causes nausea and vomiting. In my opinion this condition is more likely to follow certain preparations of the drug than others in medicinal doses. The dose should always be small enough, and especially so if the patient has never taken the remedy; for, now and then a patient will be found who cannot bear even the smallest dose, because of an extreme sensitiveness.

It is an established fact that a much larger dose, proportionately, can be given hypodermically, without producing nausea, than can be given by the mouth. The preparation best suited to be given by the mouth and the one least likely to produce nausea in full medicinal doses is, according to my experience, the concentration lobeloid; the dose ranging from 1-24 grain to 1-4 grain. In poisonous doses, it becomes an emetocathartic. The preparations best suited for hypodermic use are lobeline sulphate and subculoid lobelia, the dose of the former ranging between 1-400 and 1-100 grain, and that of the latter between 10 and 60 minims.

Before naming the principal diseases in which lobelia preparations are indicated, I want to call attention to a peculiar action exerted by this remedy over the circulation such as probably is not seen in any other remedy, at least not in such marked degree.

The primary effect of an ordinary medicinal dose of lobelia is, to equalize the circulation. If the blood pressure is too high, it will lower it; if too low, it will raise it. One thing should be remembered in this connection, and that is, if the blood pressure is too low, small doses or one medicinal dose will raise it, but repeated doses will again depress it. Never repeat full medicinal doses when the blood pressure is below normal.

Children and the aged bear lobelia well, but it should be borne in mind that, like many other medicinal agents, it is poisonous in physiological doses and should never be prescribed carelessly. However, used with an ordinary amount of common sense, lobelia is a most promising remedy the medicinal possibilities of which have not been half

told. The oftener I prescribe it, the more enthusiastic I become over its future.

Diseases in Which Lobelia Is Indicated, and the Dosage

Asthma.—In this disease, lobelia has won for itself a lasting reputation. Give lobeloid, 1-6 grain every thirty minutes for three or four doses, unless relief is obtained sooner. Should this fail to give relief or the case be very urgent, give lobeline sulphate, 1-200 grain, hypodermically. If the asthma is associated with cardiac dilatation, give only 1-400 grain. Elderly persons who suffer from this disease are especially benefited by this drug, which relieves the labored breathing and strengthens all the processes of life. In feeble heart action of the aged or where the patient is weak and reduced from long illness or operation, small doses quickly restore the cardiac tone.

Bronchopneumonia.—Children with this disease should be given 1-12 grain of lobeloid every twenty to thirty minutes until nausea is produced, if cough is tight and breathing labored; then one dose every three hours. Should the symptoms be urgent, with high nerve tension, 10 minims of subculoid lobelia or 1-300 grain of sulphate of lobeline should be given hypodermically. Should the symptoms not be ameliorated in from thirty to sixty minutes, the dose may be repeated. For adults, the dose of subculoid should be from 40 to 60 minims and of the lobeline from 1-200 to 1-100 grain. When the urgent symptoms have been mastered, follow with calcidin, to liquefy the secretions.

Bronchitis.—The above directions will apply to acute bronchitis.

Angina Pectoris.—Give 30 minims of subculoid or 1-200 grain of lobeline hypodermically and repeat in thirty to sixty minutes, if not relieved. Counterirritants externally.

Infantile Croup.—If the symptoms are very urgent, give 1-400 to 1-300 grain of lobeline or 10 minims of subculoid hypodermically, then 1-24 to 1-12 grain of lobeloid every three hours.

Membranous Croup.—In this disease, there is no doubt that a full dose (gr. 1-200) of lobeline or 20 to 30 minims of subculoid hypodermically will relieve the most urgent symptoms; but, even if the diagnosis is in doubt, I believe in administering the antitoxin at once. If the latter is not at hand, the other remedies mentioned may be given and at the same time the system saturated with calcium sulphide as fast as possible. This may prolong the little-one's life until the antitoxin can be obtained.

Dysmenorrhea.—When this condition is associated with high nerve tension or hysterical convulsions, I know of no remedy equal to the one in question. A dose of 1-200 grain of lobeline should be given, and repeated in thirty to sixty minutes if relief has not followed. To maintain the after-effect, cannaboid, 1-12 to 1-6 grain, may be given every two, three or four hours, as indicated.

Puerperal Eclampsia.—Upon the first seizure, give, hypodermically, either subculoid lobelia, 60 minims, or sulphate of lobeline, 1-150 grain. You can give veratrum with this if you so desire. Start all the eliminative organs agoing, and, if necessary, repeat the lobeloid in one or two hours.

Infantile convulsions.—Until the cause is found and removed, give to a child under two years, 1-300 grain of sulphate of lobeline hypodermically, and repeat in two or three hours if the convulsions do not cease. If over two years of age, give 1-200 grain, and repeat as indicated. Physicians preferring the subculoid should give from 5 to 15 minims of it, and repeat in one to two hours; to children over two years, 15 to 30 minims. If there is a high temperature, a rapid pulse, and the skin is dry, aconite may be combined or alternated with the above.

Hysteria.—To control acute hysterical seizures, we have no more reliable remedy than lobelia. For adults, the initial dose should be not less than 1-150 grain of the lobeline or 60 minims of the subculoid. In acute hysterical mania, this dose should be repeated in one hour if symptoms do not abate, then two or three times per day as required.

Rigid Os.—In this condition, give lobeloid, 1-6 grain, every twenty to thirty minutes until relaxation occurs or emesis is threatened. If the pains are irregular, then to each dose of lobeloid add caulophylloid, 1-6 grain.

Tetanus.—Give lobeline sulphate, 1-200 grain, or subculoid, 60 minims, hypodermically every hour for three doses, then, as indicated until antitetanic serum can be secured and given.

Strangulated Hernia.—If our Materia Medica enumerates between the lids any one drug that will aid us in the reduction of a stubborn hernia, it is lobelia. I have not seen the action of any other drug so beautifully illustrated in any disease as that of lobelia in an irreducible hernia. When all other means, including hypodermics of morphine, have failed, give sulphate of lobeline,

1-200 grain, or subculoid lobelia, 60 minims, hypodermically, carefully watching for the relaxation to occur; then by means of taxis reduce the hernia. I, once, saw one case in which all the usual methods had been tried in vain, when after one full dose of subculoid the hard tumor softened and reduced itself while I was looking on.

Vomiting of Pregnancy.—If the vomiting is purely reflex or an irritated nervous system predominates, you can expect good results from lobelia. Give 1-300 grain of the sulphate of lobeline or 20 minims of the subculoid twice daily. I once had one case in which the vomiting was controlled by giving lobeloid, 1-12 grain, by the mouth one hour before the time for the patient to get up every morning.

Whooping Cough.—There are but few patients having this disease that are not benefited by the intelligent use of lobelia. This is especially true for children with a highly developed and irritable nervous system. Most children are benefited when given, by the mouth, lobeloid, 1-12 grain, three or four times per day. In those cases in which the paroxysms are severe, 10 minims of the subculoid or 1-400 grain of the sulphate of lobeline should be given hypodermically twice daily. If the child is under two years, 5 minims and 1-600 grain respectively, will be sufficient dosage. In some cases, a dose at bedtime, to ward off paroxysms in the night, is effective, in connection with other treatment.

Pain.—With but few exceptions, every form of pain will be benefited by the intelligent use of lobelia. The greater the tendency of the pain to be spasmodic, the more pronounced the influence of this remedy.

Pain in the stomach soon after eating often is controlled by lobeloid, 1-6 grain, taken every twenty or thirty minutes for two, three or four doses. In very severe cases of gastralgia, that comes on immediately after a hearty meal because of suppressed peristalsis, either empty the stomach with apomorphine or else combine menthol or capsicum with the lobeloid, given by mouth. When pain comes on an hour or two after meals, due to a thickening of the pylorus, 1-200 grain of sulphate of lobeline should be given hypodermically. To relieve the pain during the passage of a gallstone, the passage of a stone from the kidney to the bladder (renal colic) or the passage of a stone through the urethra, give a full dose, hypodermically of the remedy—say, 1-200 grain of lobeline or 60 minims of subculoid, repeating if necessary. The pain of cystitis and urethra stricture is greatly relieved by this remedy. The same is true in many cases of migraine, especially the periodical sick-headache; 30 minims of the subculoid being a fair dose.

Other conditions.—Lobelia is a remedy of value in almost every kind of poisoning. Also, it deserves consideration in all cases where the danger-signals are being displayed by nature; to wit: cynosis, labored breathing, radial pulse gone or very feeble, pinched features, anxious expression, cold extremities, dull eyes, dilated pupils, lost reflexes, and all that goes to make up a picture of threatening dissolution. In just such conditions, you will find that a full dose of the remedy, given hypodermically, often proves a life saver.

I should be derelict in my duty to the reader if I were to close this article without saying that in this agent we have one of the best-known means to restore the patient in chloroform-narcosis. Give 1-200 to 1-100 grain of lobeline or 40 to 60 minims of subculoid hypodermically, and repeat in fifteen to twenty minutes if there are no signs of improvement.

I could fill several pages enumerating still other conditions in which this drug is useful; but, I believe that, if the reader will study lobelia as it deserves to be studied, he will soon learn for himself when and in what disease-conditions to employ it to advantage.

The following assertions are based upon a careful study of this drug for years:

The field of usefulness for lobelia is broader than that of any other drug known.

Used hypodermically, it is an emergency-remedy of the first rank.

It is a life saver, as has been proved over and over again, after all know expedients had been tried and failed and the patients were in the throes of death.

No remedy known to me acts so promptly when given hypodermically in trying conditions.

There are physicians who tell us that they are afraid to prescribe lobelia—barring a few special conditions—because of its depressing effect in producing nausea and vomiting. However, I can affirm, from my own knowledge and from the experiences of hundreds of other physicians, that there is very little to be feared from this source when the remedy is given in proper medicinal dosage. Occasionally a patient will be found who is oversusceptible to its action, but these do not aggregate more than 3 percent. Moreover, given hypodermically, it is very much less prone to nauseate the patient.

Nonoperative Gynecology

By William Rittenhouse, M. D., Chicago, Illinois

[*Continued from February issue, page 112.*]

Dysmenorrhea

A MAJORITY of the female sex suffers a good deal of pain at the menstrual period, and a considerable proportion is wholly or partly disabled for one or two days each month. So common is this state of affairs that the employers of women in stores and offices are, for this reason, obliged to submit to more or less inconvenience and interference with business, while occasionally the employee herself is compelled to give up her position, because her frequent absence from her post of duty becomes intolerable.

Two reasons are largely responsible for the continued prevalence of this state of things; namely: the all too common belief that menstruation normally is painful, and secondly, the reluctance naturally felt by young women about consulting a physician on so delicate a matter and possibly having to submit to an examination.

The question as to whether menstruation might not be a painless occurrence for every woman has been discussed quite as much as that of painless childbirth. I shall not attempt to settle it, but, of one thing there is no doubt, namely that women are suffering a great deal needlessly. While probably there are some cases that cannot be wholly relieved and perhaps a few that cannot be benefited at all, it nevertheless is true that the great majority of the subjects of dysmenorrhea can be helped to the extent of reducing their suffering to a degree that is bearable, while many can be cured entirely. The reluctance shown by young women toward seeking medical aid in this matter can best be discussed under the head of treatment.

The Causes of Painful Menstruation

The causes of dysmenorrhea are exceedingly varied and complex. In some cases, it is due to uterine displacement or to flexion. In others, the position of the uterus is normal, but stenosis of the internal os constitutes a mechanical obstacle to the escape of the menstrual fluid. This stenosis may be anatomical and permanent or it may be spasmodic and temporary. Then, again, the dysmenorrhea may be of the membranous type, in which the epithelial lining of the uterus is cast off as a snake sloughs its skin; the passage of this slough through the os producing a painful spasm. (When carefully manipulating this slough in water, it will be found to be a perfect cast of the uterine cavity.) In some instances, the pain is almost entirely ovarian and is, apparently the result of congestion. Some writers regard stenosis of the uterine ends of the fallopian tubes as a cause of menstrual pain. I know of no way of determining the truth of this, but, there seems to be no doubt that the bulk of the menstrual flow comes from the uterine mucosa, so that it may well be doubted that the condition of the tubes constitutes any great factor in the causation of pain. In cases of pyo- and hydrosalpinx, we occasionally observe that the fluid escapes intermittently as the uterine end of the tube relaxes after a period of contraction; however, I have never seen a similar phenomenon in menstruation.

When we come to consider the active external causes of dysmenorrhea, we encounter a fruitful field.

Many of the causes of this kind could be grouped under the single heading of "indiscretions". To berate the follies of woman's dress is trite; they have always been the butt of cheap newspaper wit—like the mother-in-law joke. But, there is no gainsaying that very many of woman's ills are due to the fact that she is more intent upon dressing fashionably than intelligently. Her clothing often is insufficient and still more often inadequately distributed over the body. Her feet and legs are not properly protected against wet and cold. Badly fitting shoes and high heels derange the operations of the muscles and nerves to as high as the waist and even react upon the spine.

Unsuitable food, excessive use of sweets, late hours, constipation, bad hygiene in general, all have their effect in producing conditions of health that find abnormal expression in various ways, one being painful menstruation.

I am convinced, too, that the psychological factor contributes—although perhaps not in large degree, yet nevertheless, to some extent—to the prevalence of these functional disorders. In matters pertaining to sex, the young women of our day are undergoing an education which compares thoroughly with the hothouse development of a plant. Sex-novels, problem-plays, free discussions, in

the newspapers and elsewhere, of sex-questions, all these and like ones operate in making the modern girl extremely world-wise and precocious. I have had patients admit that the reading of certain novels (which I shall not advertise by naming) had produced painful menstruation—no doubt as a result of ovarian congestion.

The Diagnosis of Dysmenorrhea

The diagnosis of dysmenorrhea seldom presents any difficulties, usually being made by the patient herself. There is one exception, however, and an important one: the distinguishing between the first symptoms of abortion and dysmenorrhea. The young doctor, especially, should be on his guard against error in this respect. I can recall several instances in which I had highly instructive, if somewhat mortifying, experiences of this kind.

A married woman who was very desirous of children had missed a period and when later seized by spasmodic pain accompanied by a flow of blood sent for me and said that she was having a miscarriage. Incautiously I accepted her diagnosis and treated her accordingly. When the outcome showed that it was merely a case of painful menstruation, the woman very properly lost confidence in my diagnostic ability and changed to another physician. The fact that the patient herself misled me does not count. The doctor has no business to accept the patient's diagnosis; he must make it himself. In the above case, had I suspended judgment and informed the patient that it would take a little time to determine whether she was really pregnant, I should, probably, have retained her confidence.

On the other hand, a patient may consult her doctor for dysmenorrhea, when she really is in the first stage of abortion. Here, caution is more necessary even, than in the other, lest the doctor find himself mixed up in a case of criminal abortion in a manner that may prove embarrassing. These patients sometimes are perfectly sincere, not suspecting pregnancy; but, more often they are aware of an undesired pregnancy and hope to get the doctor's cooperation under false pretenses.

I do not believe that a doctor should allow himself to become a cynic, but, I must admit that there is at least some justification for the frame of mind expressed by a well-known gynecologist in my hearing in these words: "Suspect every woman, who comes before you for examination, of being pregnant and of having venereal disease, as the case may be." While I should call such an attitude of mind little less than brutal, I realize that the doctor never must relax his caution and wariness, else he will sooner or later be caught napping.

The differentation between dysmenorrhea and abortion is not always possible at once. It is well to remember that the menstrual fluid usually emits a characteristic odor; still, this alone is too vague and uncertain to base a diagnosis upon. Where an immediate diagnosis is impossible, it is better to say so frankly, no matter how positive the patient may be that she is, or is not, pregnant. This applies more especially to married women and to strangers. Of course, in the case of young women of known respectability, no tactful physician would hint at pregnancy without good reason. Fortunately, the treatment that is proper in the one instance also is proper in the other; namely, to relieve pain and spasm. This can do no harm whether the case be one of dysmenorrhea or of abortion. In the meantime, the symptoms can be studied, until the diagnosis is arrived at.

The Treatment

The treatment of dysmenorrhea frequently is neglected for years, so that the condition has become chronic. For this neglect, the education—or, rather, lack of education—of our young women is largely responsible. It seems to me that, if mothers would give their daughters the right kind of teaching when these reach puberty, much suffering would be prevented. Many mothers have a wrong idea about what modesty consists in. I have known many mothers who have so taught their daughters that, when it became necessary to consult a doctor on a delicate subject, the young women showed the same frankness and self-possession that they would have in discussing, say, a throat trouble. And these have never been lacking in true modesty. I have always felt a high degree of admiration for the common sense of the mother who so taught her daughter, and for the daughter who could accept so sane and sensible a view of life. Of course, human nature differs, and it is not equally easy for all young women to look at such matters in the right light.

As the majority of cases of dysmenorrhea occurs in single women, it usually is wisest to resort to medicinal treatment and hygienic advice first, and not to insist upon a physical examination until its absolute necessity is clear. Many cases can be cured by appropriate medication, and a doctor holds his

patients better when he shows regard for their feelings by avoiding unnecessary examinations; then, when he deems examination necessary, he is not likely to meet opposition.

The Value of Viburnum Prunifolium

My sheet-anchor in the treatment of dysmenorrhea is viburnum prunifolium, popularly known as black haw. The therapeutic nihilists of today are inclined to ridicule the efficacy of this drug; however, when I have used a remedy for a third of a century and have obtained results that have been convincing, not alone to myself, but to my patients, I can afford to let theorists sneer. Undoubtedly there was a tendency in the past to a blind faith in drugs, but some physicians today are going to the opposite extreme, and this is the worse of the two.

I know men who smile incredulously when I tell them of the splendid results I get from viburnum in dysmenorrhea, from digitalis in albuminuria, from veratrum viride in eclampsia and pneumonia, from salicylates in scarlet-fever, and so forth, and, yet, those same men are groping wildly about for some satisfactory treatment for those very conditions or else are folding their hands and saying, in effect: "If I do not know anything about it, nobody else must assert that he does." A few years ago, a well-known surgeon of Chicago asserted that we have no medicinal treatment for pneumonia. At about the same time, a prominent obstetrician said, "We know simply nothing about puerperal eclampsia". He should have said, "I" instead of "we". This is somewhat of a digression, but I find it difficult to contain myself when speaking of that superior individual who looks upon drugs as a relic of a bygone age.

In order to get results from viburnum, much depends upon the manner of giving it—and this has reference to the time and the frequency of its administration, the dose, and how it is prepared. The nauseous taste of the fluid extract is a serious obstacle to the satisfactory administration of viburnum, as the stomach is liable to reject it before enough can be taken. There is a proprietary preparation of it, in which the disagreeable taste is more or less successfully covered; however, my experience has been that all liquid preparations of the drug soon disagree with the stomach. For many years, I have prescribed exclusively the solid extract in chocolate coated tablets containing 1 grain each.

Various manufacturers combine with the viburnum several other antispasmodics and aromatics. Whether this increases the therapeutic efficiency, I am not prepared to say; it does seem, though, to render the drug more tolerable to the stomach, for, since I have prescribed these compound viburnum tablets I have rarely found them to irritate the stomach.

As a rule, I order the patient to begin treatment four or five days before the menstrual period, taking one or two tablets three times a day after meals. This alone often prevents any severe suffering, but, if it fails to do so, she is instructed to take the same dose every two hours as soon as the pains set in. I impress upon the patient the necessity of continuing the treatment for months; for, I have often found that, while there may be very little improvement the first month, there was increasing benefit with each succeeding month. I do not advise the continuous use of the remedy, for fear that the stomach might rebel; hence, I suspend the treatment after each period until five days before the next one. This line of treatment has proven so satisfactory that only in a minority of cases have I found it necessary to resort to other means.

Among other drugs prescribed in dysmenorrhea, may be mentioned acetanilid, phenacetin, and similar coaltar analgesics. Sometimes these prove very effective for giving relief, but I have not found them to possess any curative value. While there may be cases of suffering so severe as to require the use of opiates, these should be given only when all else has failed. To place these narcotics in the hands of a patient, to use according to her judgment, is, to invite forming of the opium-habit. A similar danger obtains in the use of whisky or other forms of alcohol. These, taken hot, are a popular and somewhat effective remedy in painful menstruation; but, because they do give relief, it is the more imperative for the doctor to point out the associated danger.

Whatever drug-therapy may be adopted, the patient should also receive instruction in the hygiene of dress, diet, and habits, and we should emphasize the fact that the cure is largely in the woman's own hands. The influence that wet and cold feet may have in causing or aggravating the trouble will easily be understood by her, if her attention is called to the well-known fact that a hot foot-bath often will give great relief during an attack. A hot hip-bath or a hot general bath may also prove of value.

When the best medical and general treatment fails, then a thorough examination

should be insisted upon and such local treatment instituted as may be indicated. Any misplacement must be corrected, flexions straightened, and a stenosed os dilated. Where none of these conditions exists, treatment for reducing pelvic congestion may give good results. A prolonged hot vaginal douche daily for the two weeks preceding menstruation will sometimes work like magic; the best time being just before retiring. A glycerin-tampon inserted in the vagina every day or every other day may aid; but, plenty of glycerin must be used.

In a few cases, all nonoperative means will fail. Then a thorough curetting may be tried. As to whether the benefit often obtained by this procedure is due to the scraping or to the thorough dilatation of the cervix, I am not certain. However, even this operation not always is effective.

Parturition usually constitutes an effective cure. I recall a case in which the patient had been a great sufferer every month since puberty. She was barren during five years of married life. Then a thorough curettage was tried, without appreciable benefit; however, four months later, she became pregnant, and after the birth of her child the old trouble was relieved permanently.

[*To be continued.*]

Albuminuria and Calcium Deficiency

By GEORGE D. SWAINE, M. D., Cleveland, Ohio

I HAVE read with deep interest a series of articles in CLINICAL MEDICINE, contributed by Dr. William Rittenhouse, of Chicago, on the subject of the albuminuria and eclampsia of pregnancy, and, although I cannot endorse all he says, I agree with him most heartily on the one point, that "the best way to treat eclampsia is, not to let it happen."

This is not in any sense a criticism of Doctor Rittenhouse or of any other writer who has preceded him, nor of any theory or guess that has ever been published on this important subject; for, all that I know about albuminuria and eclampsia has been learned from ratiocination, study, and experience during a practice extending over a period of more than forty-three years and an attendance on 4868 cases of confinement.

In my own practice, I have had 102 cases of albuminuria and only 9 cases of eclampsia. In consultation with other physicians, I have seen 92 cases of albuminuria and 11 cases of eclampsia. From that experience, I find that on an average about 1 woman out of 54 has albuminuria, and of those who do have it about 1 in 11 has eclampsia.

Therefore, I believe that it is reasonable to assume that, although the eclamptic woman usually, though not always, has albuminuria, it is not necessarily the cause of the convulsions. For, experience has taught me that eclampsia may be owing to (1) uremia, (2) cerebrospinal reflex irritation, of uterine origin, (3) cerebrospinal (apoplectic) congestion, and that, unless the patient is of a certain *type*, with a predisposition to epileptic fits, she is not likely to have eclampsia, no matter how bad the albuminuria may be. At least, that has been my experience.

Nearly all of the older writers and teachers have assumed that, because in nearly every case of nephritis there is albuminuria, the converse must be true, and that in all cases of albuminuria there must be a nephritis; but, experience does not justify such a conclusion.

Albuminuria is a symptom; a distress-signal, an S. O. S. call for help. We see things either correctly or incorrectly in this old world, according to our point of view. If we could all change our individual point of view and keep ever before our eyes the fact that, instead of a mere "case" of "albuminuria," we are dealing with a sick woman, who is suffering from a *wrong* (calcium deficiency), which involves her entire body-chemistry, we could obtain a perspective that would enable us to study her general condition properly, not as a "case" but as a woman having a faulty and defective metabolism, who is trying to reproduce her kind at the end of an umbilical cord, and whose life and safety are in our hands.

A human being is the most wonderful, the most complex, and the most perfectly organized mechanism in existence, and bearing children is a perfectly normal, healthy function of the female of the species, but, when this female has albuminuria, she is suffering from a wrong that has been handed down to her from one or more of her ancestors or handed to her by the male of the species; and, back of every contributory cause, including a possible nephritis, pressure on the

blood-vessels in the splanchnic area, syphilis, tetanus, meningitis or the socalled "kidney of pregnancy," I have always found the real, basic, etiological factor to be *calcium deficiency*.

Eclampsia Should Not Occur

We are face to face with a condition, not a name or a theory. It would be an insult to every reader of CLINICAL MEDICINE for me to assume that I must prove that calcium, in normal, physiological quantity, is necessary to the health of every human being; for, we all know that without this most important element there could be no cell activity, no muscular or nervous equilibrium, no digestion or metabolism; yet, every day we meet people who are physically and mentally defective, as a direct result of calcium starvation.

Just as carbon is the most important "organic" element in the body—all of the albumins and albuminoid structures containing approximately 53 percent of carbon—calcium is the most important inorganic element, comprising, as it does, about three-fourths of the total mineral solids of the body. But, when a woman has albuminuria, she is deficient in the most important inorganic element, and is losing the most important organic element.

Brubaker tells us that "it is quite certain, in the light of our present knowledge, that urea is partly formed in the liver by the cells, out of cleavage-products of proteid metabolism." If that be true, is not it reasonable to presume that the liver, instead of the much-abused kidneys, may have something to do with the low output of urea?

In addition to the scanty urine of low specific gravity and a low percentage of urea, I have always found, in every case of albuminuria that has come under my observation, indigestion, intestinal fermentation, toxemia, and, in the language of forty years ago, (a) oppression, (b) depression, and (c) exhaustion. Oppression, from retention of the waste products of a destructive tissue metamorphosis; depression, from the action of the toxins on the nerve-centers; exhaustion, from a deficiency of calcium, which existed before the woman became pregnant and is made more acute by the demands of the growing fetus.

Logically, then, the indications for treatment are: for the oppression, elimination; for the depression, stimulation; and for the exhaustion, nutrition. These three indications must be met, else our treatment is simply palliative, not curative.

Unfortunately, a great many women have formed the opinion that swelling of the feet, besides a good many other symptoms, are a sort of "necessary" accompaniment of being "in a family-way," so that, as a consequence, the family physician is not consulted until called to attend the confinement. Under such circumstances, the doctor is not to blame for anything that may happen; however, if consulted before the middle of the ninth month of gestation, he should be master of the situation until the patient is delivered at term, and should take steps to prevent dangerous complications.

Prevention and Cure of Albuminuria

I have never used tincture of digitalis in the treatment of albuminuria, and I have never lost a case. Digitalis and veratrum are two very potent drugs, and, when placed in the hands of a patient or nurse, not always are safe. Yet, "safety first" should always be our motto. Administering drastic cathartics or diuretics is too much like whipping a tired horse up a hill.

The value of an exclusive skim-milk diet lies almost solely in its calcium content and in the ability of the patient to digest and metabolize it. Supplying a pregnant woman with mechanical mixtures containing phosphate of calcium is of doubtful value, for she cannot convert it to her use. She must be assisted in metabolizing her own calcium salts out of the food that is ingested and digested by her.

Ordinarily I incline to make use of the vegetable remedies, when these can be made to meet the indications, but in cases of this kind we are confronted by certain definite chemical demands of the system that must be met. So, keeping in mind that there is a distinct relation between the chemical composition of our remedy and its action upon the body-chemistry, I have worked out the following method of treatment for albuminuria, with what I call, for the sake of convenience, a chlorine-mixture. This is made as follows:

Rub, in a mortar, 60 grains of potassium chlorate with two ounces of distilled water until dissolved. Pour into a 6-ounce bottle and add 4 drams of dilute hydrochloric acid, and 4 drams of tincture of ferric chloride. Shake thoroughly. Add enough syrup of orange-peel to make 6 ounces. I always prepare the mixture myself, and follow the directions to the letter; then I know I have it right.

Begin the treatment by giving at one dose, once only, 2 grains of finely triturated calomel,

at bedtime. Follow it in the morning by a cathartic dose of Abbott's saline laxative. When this has acted thoroughly, begin giving the chlorine-mixture in teaspoonful doses every two hours, and keep it up faithfully night and day when the patient is awake.

Give boldine hydrobromide, in 1-3-grain doses, before each meal and at bedtime, to promote the excretion of urea. Thalosen, in "dose enough," is an ideal laxative and should be given daily to effect. A tub-bath or sponge-bath daily is essential to keep the pores of the skin open and active.

A generous diet is absolutely essential. It should be so regulated as to supply the patient with proteids, carbohydrates, fats, and the inorganic salts, all in proper proportions; a mixed diet being the source from which the patient must receive the necessary nutritive elements to supply her own needs and those of the forming child.

I have used this line of treatment for more than forty years, and not alone in my own practice, but have suggested it to many other physicians in consultation, and always with the most gratifying results, with the exception of those where syphilis was an element to be dealt with.

The important part of the treatment is, the steady, persistent use of the chlorine-mixture. Do not fear any danger to the teeth. If the patient is at all fearful about her teeth, let her dilute each dose with an equal quantity of water and take it through a glass tube. But, she must keep on taking it in full doses night and day.

With this form of treatment, we relieve the oppression, promote oxidation, stimulate the nerve-centers, aid digestion, assimilation, and the selective action of the body-cells, stimulate the liver to normal activity, and supply the system with just what it needs to restore a normal equilibrium to the body-chemistry.

I do not know just how this mixture restores the functional activity of every organ in the body or why it meets every indication in the treatment of albuminuria and prevents eclampsia; but, the "proof of the pudding is in the eating thereof," and a fair and thorough trial of the treatment as here outlined will convince the most skeptical.

If, as I firmly believe, every case of albuminuria is primarily a case of calcium deficiency—and it was upon this theory that I began using the chlorine-mixture—then I think it is reasonable to assume that it actually supplies to the system an element that is necessary to enable it to endow the dead inorganic salts with life and to restore a proper balance to the processes of metabolism. At any rate, the chlorine-mixture comes the nearest to being a specific of any mixture I have ever used.

The Pail of Water and the Radiator

By A. L. Benedict, A. M., M. D., Buffalo, New York

EDITORIAL NOTE.—Is the pail of water on the radiator a physical necessity? Doctor Benedict says "no," and supplies ample reason for his denial of this long accepted provision for increasing the humidity of the living-room.

At the outset, I readily admit that, speaking in general, it is not best for a medical writer to go outside the range of his special interests; still there are certain matters of hygiene that pertain to all branches of practice, and among these steam-heating of houses is one.

So much literature deals with the steam-heated flat and with a comparison of the different methods of heating residences, that little need be added here; however, with few exceptions, the advice is given, to supplement any form of heat, if it does not provide directly for the admission of outdoor air of normal humidity, by some kind of water-container. On the average, heat conveyed by radiators is the most economic and efficient system, since it has the hygienic advantage of neither abstracting anything from the indoor air nor of adding to it any deleterious gases, dust, and the like. As against this, it has the disadvantage that it does not add to the indoor air a supply of oxygen from without, that its regulation in the interest of economy rather discourages ventilation, and that often, if not usually, in the larger cities it is supplied without direct charge in addition to the rent, so that the tenants are tempted to live in an atmosphere of a much too high temperature.

On the other hand, the primitive methods of heating by means of open fireplaces at present are too expensive for general adoption; they require too much attention if they are to furnish an equable temperature; they

almost always give rise to drafts and an uneven temperature at different places in the same room, even for different parts of the inmates' bodies. While these systems tend to draw fresh air and moisture into the house, they also are extremely liable to vitiate the indoor air more or less with noxious gases. Gas-grates, stoves, and hot-air furnaces are, more or less, compromises between primitive open fireplaces and radiators, and they vary, for different systems and at different times, in the operation of the same contrivance, between the advantages and disadvantages of both. Stoves, if permitted to become red-hot, are pervious to gases and then emit into the room carbon monoxide, in addition to being liable to give off gases accidentally —a danger that pertains to all systems of heating except those that radiate heat from closed conveyors.

It is more generally accepted that the best method of heating is that by means of radiators; the choice between steam, hot water, and electric-resistance coils being mainly an economic consideration. This method should, of course, be controlled, so as to keep the indoor temperature at a proper point—even at the supreme sacrifice of energy required to turn a valve or of economy in failing to get all that one can for a fixed rental. It should also be borne in mind that, while the radiator subtracts nothing from the air and adds nothing detrimental to it, it in no way is responsible for any addition of fresh air, except by the currents produced, which are feeble in comparison with other heating devices. For this reason intelligent regulation of ventilation is a necessity, and measures must be taken to admit outdoor air.

The statement that a radiator subtracts nothing from the air is theoretically correct, in practice, though, incorrect. Merely heating air increases its capacity for absorbing moisture and, hence, reduces its relative (percentage) humidity. Consequently, the advice is almost universally given that some form of pail or pan should be used in connection with any radiation-system (as also holds good for hot-air furnaces and any other system of artificial heating that reduces relative humidity more than it adds moist outdoor air), so placed as to provide for the constant and adequate evaporation of water in the room. It scarcely is necessary to state that such simple apparatus is liable to be neglected and that it tends to become foul. However, it is not likely that a neglected evaporation-pan is a source of great danger as a breeding-place either for mosquitoes or yeasts, hyphomycetes and bacteria.

Is Dry Room-Air Injurious?

The real point at issue is, whether dry air is harmful. The U. S. Weather Bureau states the extremes of humidity for Buffalo to be, in round numbers, 30 percent (minimum) and 100 percent (in a fog or heavy rain), the ordinary range for winter being between 60 and 90 and, for summer, between 40 and 80; the yearly average being 76 percent. In summer, with free ventilation by open windows and no artificial heat, the indoor humidity is nearly the same as that outdoors. In winter, even with a hot-air furnace, the humidity is reduced to half that of the outdoor air, while in a steam- or hot-water-heated apartment the humidity often is reduced below the outdoor minimum of 30 percent, and not infrequently is zero, as read by instruments not of the greatest accuracy.

Superficially considered, any considerable deviation from natural standards impresses us as dangerous, especially when the figures used appear large. It should be remembered, however, that relative humidity simply means the percentage of water present as compared with that which might be present if the air had its full charge of water up to the point of precipitation. At 25° C. (77° F.), 100 percent means 22.5 mils (Cc.) of water for each million mils of air. This is nearly the maximum of water actually contained in the air that we breathe, and in cold weather even the saturation of the atmosphere with watery vapor amounts to only 5 or 6 mils of water per million. It is only exceptionally that the residual power of the air to absorb moisture has any practical influence on viability. For instance, in Death Valley, where the temperature often reaches 120° F. and where the humidity is practically zero, the loss of water from the body by evaporation must be met by almost constant drinking and the loss of a water-bottle will, almost inevitably, spell death.

On the contrary, under ordinary conditions of temperature, it is a matter of general observation that both high and low temperatures are better withstood if the air is low in humidity. Heat-prostrations are far more common in cities having high humidity in summer than in those of low humidity, while suffering from cold (other factors, as wind velocity, being equal) is less with low than with high humidity. Granted that extreme high temperature and rarity of air

from altitude are absent and that other factors, such as dust (especially when containing alkali), social and economic conditions influencing diet, and so on, are not present, it is generally true that regions and seasons of low humidity are the most healthful, and even that brief periods of low humidity are marked by a sense of wellbeing. It is not worth while to dwell at greater length in this article on natural ranges of humidity, further than to remark that this is a very superficial consideration of a highly interesting and very complicated subject.

What especially concerns us is, whether it is desirable to attempt to bring indoor air up to the humidity of outdoor air. In warm weather, comfort solely with regard to temperature usually insures free ventilation of rooms, so that the humidity of indoor air is practically identical with that of the outdoor air. While, in hot weather, we often associate dampness with comfort, it is solely because of the associated coolness and increase of humidity preventing free evaporation of perspiration and, hence, producing as much discomfort as an actual increase in external temperature. At intermediate seasons, we frequently employ fires to dry the air, rather than to increase the external temperature, both for the effect on the development of saprophytes of various kinds and for that on the body itself.

The control of temperature by perspiration involves an apparent contradiction, something like "blowing hot and blowing cold with the same breath". This inconsistency is eliminated if we remember that the happy mean is an absence of appreciable moisture on the skin or in the clothing. If the external temperature is high enough, so that cooling by evaporation of perspiration is immediately necessary, this effect is prevented by the presence of a sensible covering of perspiration; while, if the external temperature is below that necessary to maintain an even balance of internal temperature, an accumulation of water in the liquid state on the skin or in the clothing produces a chill. A slight fall of external temperature brings the balance from a condition of perspiration to reduce internal temperature to one in which the accumulated water of perspiration causes chilling. The same effect rapidly follows the cessation of exercise in cold weather—as after changing a wheel-tire. With an unequal distribution of artificial heat, as in rooms warmed by fireplaces or stoves, especially if drafts are present, the balance may be disturbed in opposite directions on different areas of the body at the same time. Probably the pathologic effects of chilling are most dangerous under this condition.

The criticism may already have been advanced that the allusion to a balance of temperature is very vaguely stated. It is generally accepted that a healthy nude human being can, through his heat-regulating apparatus, preserve the normal body-temperature without difficulty and without danger, for a range of external temperature of 10° C. either way from the 37° standard, or, from about 81° to 117° F. It is doubtful whether a person accustomed to the use of clothing and rarely experiencing external temperatures above that of the body, can, in the naked state, readily accommodate himself to a fluctuation of temperature of more than 5° C. either way from the normal of 37°, that is, from about 90° F. to 108° F. If any modification of this statement is needed, it is in a downward direction for both limits, say, to 85° F. as the minimum and 103° F. as the maximum. With the ordinary minimum of clothing used by civilized man, the optimal external temperature is never above that of the body, but ranges from about 70° F. to 80° F. For aged and feeble individuals, the optimal temperature is still more narrowly limited, but varies somewhat for different persons. For example, there is a sense of chilliness and a need for extra wraps well up to 75° F., while at 80° there is complaint of heat and a fan is requisitioned. These statements, of course, apply to individuals not actively exercising and thus increasing their heat production.

Humidity and Clothing

Referring especially to humidity, we find as a matter of general observation that with ordinary light clothing even healthy persons suffer from the heat (?) on even moderate exertion at any temperature above 70° F. if the humidity is greater than 70 percent. Without in any way implying that there is any basis in physics or physiology for considering temperature and humidity as factors in the arithmetic sense, it is approximately correct to say that for moderate ranges of either, say, from 60° to 90° F. of temperature and 20 to 70 percent of humidity the ability of the body with light clothing to maintain its internal temperature at varying degrees of exercise is nearly the same if the product of temperature and humidity is equal. This however, is merely a rule of thumb and neither mathematically justified nor absolutely cor-

rect empirically. It is merely an attempt to state in quantitative terms the general fact that a fairly high temperature, with low humidity, causes no more discomfort than does a considerably lower summer temperature with greater humidity.

Under the conditions of civilized life, it is practically inevitable that most sedentary occupations during the cold season must be carried on in rooms artifically maintained at a temperature which closely approximates that prevailing in summer. This is commonly given as 20° C. or 68° F. Few persons find that they can work comfortably at a lower temperature, while, on the other hand, the great majority do not find it advantageous to increase this temperature by more than a few degrees. As a matter of practical convenience, this artificially maintained minimal summer temperature is undergone by persons wearing clothing about sufficient to withstand comfortably an outdoor temperature of 5° C., or 9° F., less. Hence, it seems that there is sound reason for meeting the increased resistance to radiation and evaporation introduced by the additional underclothing by a diminution of humidity. So far as the general heat control of the body is concerned, there seems to be no indication whatever to attempt to offset the spontaneous tendency to lowered atmospheric humidity indoors by appliances, such as pails filled with water, that raise the humidity by evaporation.

On the contrary, if the pail of water so universally recommended to keep the air moist were really efficient, the body would be bathed in sensible perspiration or it would be necessary to dress in winter when one is indoors, as for the summer—a most inconvenient and time-consuming requirement. As a matter of fact, provided that steam-heated or other radiator-heated rooms are fairly well ventilated and kept at reasonable temperatures, their occupants suffer less from subsequent exposure to the outdoor decrease of temperature and increase of humidity, or *vice versa*, than do those who occupy drafty rooms, unequally heated by former devices and subject to escape of noxious gases or partial exhaustion of the oxygen for combustion. It is a good talking-point to emphasize the danger of passing suddenly from an atmosphere with a humidity of 70 to 90 percent to one of 5 to 30 percent. The figures sound imposing, but, as already seen, they represent only a few parts per million of actual water, and, if the danger were appreciable, the results of passing into a bath from air containing a few mils of water per million, would be fatal.

Reality Versus Theory

The claim of danger from the effects of desiccated air, coming in contact with the conjunctiva and cornea or with the delicate mucous membrane of the nose or the lower respiratory organs seems more reasonable. As already seen, however, the same potential danger exists for natural climates generally recognized as salubrious, even with special reference to the organs theoretically most endangered. Such gross exceptions as are noted are more plausibly and, indeed, almost certainly ascribed to other factors, for instance, dust, especially when containing alkali. Without absolute authoritative evidence to the contrary, it may be held that the lacrimal glands are amply sufficient to protect the conjunctiva and cornea from the effects of desiccation. So, too, the nasal mucous membrane, in connection with the mechanic arrangement to insure division and rotary currents of the inspired air, suffices to saturate this with aqueous vapor.

Whatever the original temperature and humidity of the inspired air, it is received by the lungs at practically the body-temperature, and of a humidity of 100 percent at this temperature. An exception must be made in the case of mouth-breathers, but even these are subject to greater danger from outdoor air, so far as temperature is concerned, and to considerable fluctuations in humidity from the same natural environment. Only in regard to the effect of artificially heated and dried air on the nasal mucous membrane does the argument for the pail of water apparently hold good. But, even in this regard, skepticism is warranted. Normally and inevitably, the nasal mucosa is subject to considerable differences in the temperature and humidity of the inspired air and, whatever these factors may be, they are almost always in marked contrast to the body temperature and full saturation of the alternate current of expired air.

"The proof of the pudding is in the eating". Eliminating such factors as excessive indoor life, poor ventilation, and maintenance of excessive indoor temperatures, are the occupants of homes, offices, and factories heated by radiation-systems, more subject to catarrhal troubles during the winter months than are comparable persons, occupying rooms heated by fireplaces, stoves, and the like, where water is introduced into the air by combustion or by freer draft upon

the outdoor air, or where water is deliberately and efficiently supplied to the air by evaporation? Without pretending to any special experience in this regard, the writer can only state his personal experience and observation to the contrary.

It should not be understood that the writer regards dry indoor air as, in itself, a favorable factor. He regards it as desirable solely in an incidental way. It is, on the whole, less liable to a relatively high bacterial content, bacteria and other vegetable germs being less likely to multiply in a dry than in a moist room. Actual air-borne infection, in the clinical sense, is not a very important factor, in the absence of certain specific diseases, such as the exanthemata, tuberculosis, and diphtheria. Still, a room which furnishes little moisture for the development of ordinary saprophytic germs probably offers a more wholesome environment than does one where this factor, in combination with fairly favorable temperature, tends to their proliferation.

Artificial heat by radiation from closed pipes, in connection with incandescent electric lighting, makes no demand upon the oxygen of the indoor air, gives off no carbon dioxide and no directly poisonous gases, such as carbon monoxide, methane, and so forth, from leaky gas-pipes, sulphur compounds, as from coal directly burned in the room, or likely to emit gases into a hot-air flue.

The air supply is to be considered solely from the standpoint of the demands of living occupants. Closed sources of heat and light also give off no dust. They tend to a more uniform distribution of heat and eliminate almost entirely the factor of "radiant heat" in the practical sense. Unless one sits upon or leans against a radiator or is directly exposed to a current of incoming air the whole body of any person in the room is subject to a practically uniform temperature. The dryness of the air compensates for the obstacle to evaporation imposed by heavy clothing, and the occupant of a steam- or hot-water-heated room emerges into the outdoor cold with a dry skin and dry underclothing. The protection against catarrhal inflammations on this account alone probably more than compensates for any tendency due to the potential difference in sensibility due to desiccation, especially when we remember that the conditions during expiration are practically identical under all circumstances. The lessened tendencies toward "taking cold" in turn render the susceptibility to specific infection with tuberculosis, pneumonia, rheumatism, diphtheria, and so on, less, and the "steam-heated" person is less liable to become a carrier of these infections into his environment.

Moral: Lose the fear of the dry steam-heated atmosphere, go out into the 70 percent or 100 percent humidity of the outdoor air with the same equanimity that one enters the bath-tub, and forget the foul evaporating pail all the time, as it is certain that it will be forgotten part of the time, anyway.

THE pursuit of knowledge in every direction is strewn with the records of false scents which have been followed for a time, merely to be abandoned when their falsity was at last recognized.—*Lord Cromer*.

What Others are Doing

THE PROPHYLACTIC VALUE OF TETANUS-ANTITOXIN

In a memorandum on tetanus, by the committee on the study of tetanus, appointed by the war office (*Brit. Med. Jour.*, Nov. 11, 1916, p. 647), it is pointed out that the prophylactic value of injections of antitetanic serum is beyond all question, but that there is strong experimental evidence that in about ten days the immunity conferred by the primary injection is lost to a great extent. In view of this, it is the general opinion that a second subcutaneous injection should be given in all cases of septic wounds, and that, in order to anticipate the total disappearance of the antitoxin from the body, the second injection should follow the first one at an interval of seven days. In cases of long-continued septic wounds, particularly those caused by shell or bomb, third and fourth injections at seven-day intervals are recommended.

It is self-evident that, if it is considered necessary to give a second injection, then it is equally necessary to give a third or fourth or more prophylactic injections, as the passive immunity conferred by the antitetanic serum is of short duration.

The writer of the memorandum states definitely that the danger of anaphylactic shock is negligible when prophylactic doses of 500 U. S. A. units contained in 3 mils (Cc.) of horse-serum are given subcutaneously, whatever be the interval after the preceding injection.

THE VALUE OF VACCINE-THERAPY FOR SEPTIC GUNSHOT WOUNDS

Captain R. H. Jocelyn Swan, of the British army (*Lancet*, Nov. 18, 1916) concludes, from the results of his observation in the present war, that vaccine-therapy is of very decided value in the treatment of septic wounds; this conclusion being the more convincing, as the author at first was inclined to look upon vaccine-therapy as of decidedly minor importance. His experiences at the front have demonstrated to him the value of vaccines as supplementary to surgical measures in treating septic wounds, and he is satisfied that the routine employment of a polyvalent vaccine of proteus and streptococcus is of service in inhibiting the tissue necrosis caused by anaerobic bacilli, which are so commonly associated with these organisms in infected gunshot-wounds.

CONCERNING THE PROGNOSIS OF TETANUS

In *The British Medical Journal* for January 8, 1916, Captain T. P. Kilner refers to the current view that all cases of tetanus which have a short incubation-period are hopeless from the onset and that those cases in which, the incubation period is less than twelve days terminate fatally in spite of treatment, whether with antitoxin or other means. This is not an invariable rule, however.

The author named reports a case occurring in a private soldier, aged 31 years, who was treated in the Manchester Royal Infirmary and in whom tetanus developed nine days after he had been wounded by the explosion of a shrapnel shell. Despite the existence of tetanus, the injured leg was amputated at the middle of the thigh, partly with a view to removing the focus of the infection and partly because hopes of preserving the leg were small.

At the time of operation, about 1000 units of antitoxin were injected into the spinal theca, and a further 2000 units were given subcutaneously. Then 4500 units of antitoxin were injected spinally and 9000 units subcutaneously in the abdominal wall. At 1 a. m. of the following day 6 ounces of chloretone in olive oil was administered rectally, for the continued clonic contractions of the arm muscles. Potassium bromide and chloral hydrate—20 grains of each—were then given, by mouth, at intervals of four hours. At 4 p. m., a further dose of 15,000 units of antitoxin was given subcutaneously.

Seventeen days after his admission to the hospital, that is, twenty-one days after injury and twelve days after the onset of tetanic symptoms, the patient received 15,000 additional units of antitoxin; 4500 being adminis-

tered intraspinally and 10,500 subcutaneously. It should be mentioned that, on each occasion when serum was given, the patient's condition temporarily became much worse, there being marked increase in the rapidity of the pulse and considerable rise of temperature. During the last spinal injection, it is interesting to learn, that the patient experienced painful numbness and tingling in the amputation-stump, which by this time was practically healed.

Gradually the patient regained a normal state of health—there was no return of muscular spasm, and it was possible to transfer him, very soon, to a convalescent-hospital, where he made an excellent recovery.

The author emphasizes the fact that in the case reported, recovery occurred despite well-marked symptoms and although the incubation-period had been only nine days. He also draws attention to the large doses of serum which were administered, that is, 46,000 units in all, and to the very slow and gradual relaxation of the spasms.

While many authors condemn surgical operations being undertaken after symptoms of tetanus have declared themselves, the amputation of the leg undoubtedly was of benefit in this case, in that it eliminated the focus of infection and therewith the place in which constantly new amounts of tetanus toxins were produced. The intoxication already had progressed to a very severe degree, requiring enormous doses of antitoxin for the neutralization of the toxins engendered, and it is extremely doubtful whether this patient would have recovered if the further elaboration of toxins had not been prevented by the amputation. The case was a severe one and shows what can be done therapeutically with antitetanic serum. It also emphasizes the importance of "dose enough."

DIET AND EPILEPSY

In a communication to the *New York Medical Journal*, Dr. T. E. McMurray declares that two facts have impressed him strongly in his experience with epileptics; namely: first, the digestive disturbances, as manifested by foul breath, coated tongue, constipation, and intestinal gases, and, second, an enormous appetite, especially for bread and sweets.

Consequently, Doctor McMurray tried a diet free from starch and sugar, ordering the diet that usually is prescribed to diabetics. In the way of treatment, he prescribed pancreatin and sodium bicarbonate at meals, a dose of magnesium sulphate every fourth day, and liquid paraffin daily, to keep the bowels active. Under this treatment, the epileptic seizures diminished in frequency and severity. In two cases, they returned after excesses at table, but disappeared when the diet again was restricted. The bromides were found necessary in only two cases, and then for only a short time.

Doctor McMurray did not succeed in devising means of offering a sufficient variety of suitable foods until he secured a copy of Hill's book on diabetes, since when he has had no further difficulty in this respect.

CLINICAL VALUE OF THE WASSERMANN TEST AND THE PREVALENCE OF SYPHILIS

Recent investigations indicate that the prevalence of syphilis is much greater than is shown by ordinary hospital and medical records, and also that a large percentage of cases that could not be diagnosed except with the aid of the Wassermann test would be recognized by the application of this test and therefore these subjects come under proper treatment.

This fact becomes particularly evident from a report published by Passed Assistant Surgeon William M. Bryan and Acting Assistant Surgeon James F. Hooker in *Public Health Reports* for November 24. The Wassermann test was applied for every seaman admitted to the Boston Marine Hospital since February, 1916, the tests being made in the Hygienic Laboratory at Washington.

Of 312 cases thus tested, 77, or 24.7 percent, gave a positive reaction. In the 77 positive cases, clinical syphilitic lesions existed in 19, so that a positive Wassermann reaction was obtained in 58 of the total of 312 subjects; that is, in 18.6 percent of clinically non-syphilitic adult men. On the other hand, 11 obviously syphilitic persons gave a negative reaction, because of recent treatment.

The point which we wish to bring out is this: a positive Wassermann reaction was observed in 18.6 percent of a number of adult males in whom no clinical signs of syphilis existed. That may mean one of two things; either the disease may be dormant, quiescent, or it may exist only as an infection, the reason being either a low virulence or a high degree of immunity.

Owing to the fact that sooner or later a syphilitic infection will lead to disease in

practically every person thus infected, the carrying out of the Wassermann test as a routine measure is, manifestly, of importance, particularly in institutions and organizations where large numbers of persons are associated more or less closely, and, whenever a positive Wassermann reaction is obtained, appropriate treatment should be instituted.

Very naturally, though, the intensity of this therapy must be regulated by existing conditions. In a person who is clinically free from all signs and symptoms of luetic disease, it would be gratuitous to carry out the same intensive treatment that is administered in a case of primary infection, in which, moreover, the transmission to others must be prevented; yet, even if the treatment is mild and is undertaken merely for the purpose of preventing later harm, it should be thorough. Above all, every person whose blood-serum at any one time gives a positive Wassermann reaction should remain under observation and have the test repeated at stated intervals, until it has been negative for a sufficiently long period of time to assure entire and lasting deliverance from the spirocheta pallida.

DIET IN THE TREATMENT OF PULMONARY TUBERCULOSIS

It is not so long ago that the gospel of overalimentation in tuberculosis was preached rather widely and that those who expressed doubts in the advisability of stuffing consumptives with all the raw meat, milk, and eggs that they would stand were looked upon with suspicion, as failing to give their patients the benefit of the best available treatment. Yet, the idea that consumptives require much more food than other people and that there accrues to them a particular benefit value from milk and eggs never was accepted universally, and voices have always been raised, by ourselves among others, insisting upon moderation in this as in all things, and maintaining that it is not what you put into the consumptive's stomach that benefits him, but what he digests and assimilates.

In recent years, a more sensible and more reasonable attitude has made itself felt, and evidence is accumulating that the principle of excessive feeding is erroneous. Years of practical experience have taught us to exercise more discrimination in the diet of tuberculous patients, with better and more satisfactory results. Generally speaking, the consumptive patients in the early and curable stage do not require more food than do others; when there is considerable emaciation, patients should be encouraged to eat more, but not excessively. If they can not, the condition of the stomach should be looked into and any error rectified.

In a discussion of this subject, printed in a recent number of *The Practitioner* (1916, June), Doctor David C. Muthu reminds us that our ideas concerning food-values are based upon experiments, rather than upon experience; on the analysis of the chemist, rather than on the observations of the clinician. It is but another instance of the badly balanced relations subsisting between the laboratory and the clinic; another instance in which the clinician permitted himself to be dictated to, against his better judgment, by the experimenter.

It is impossible to formulate, on the basis of experiments, a standard dietary suitable for all tuberculous patients; for, these differ in age, temperament, height and weight, in the conditions of their disease, in their digestive capacity, and so on. Diet constituted upon scientific calculations as efficient and satisfactory does not always work out correctly in everyday practice, man being a living organism, not a machine that can produce from a given quantity of foods a definite, known amount of proteins and carbohydrates.

The author's experience in the Mendip Hills Sanatorium leads him to support the three-meal system, under which the stomach is given a fair amount of work, without imposing an excessive strain, while assured a period of rest between meals. This does not mean that slight repasts between meals, such as a cup of tea and a thin slice of bread and butter at four in the afternoon, as customary in England, are objectionable. These become so only if the midafternoon "snack" is converted into a meal by the addition of cakes, pastries, and jam.

The more rest is given to the digestive organs, the more efficiently will they serve the patient; for, it must not be forgotten that the prognosis of pulmonary tuberculosis depends to a great extent upon the efficiency of the stomach. Forced feeding is not necessary in the early stages of the disease, and it is useless in the late stages, because then the digestive apparatus is not able to take care of even an ordinary amount of food. Doctor Muthu has even found it advisable, when ordinary meals produce fullness and discomfort, to cut the food short and to give the stomach rest. His experience has been that patients who cannot eat are all the better for abstaining from food now and then; for

their appetite returns after a while, and they then will be able to relish their food, as a result of the fast.

The importance attached to the quality over the quantity of the foodstuffs was shown clearly in some chemical and biological experiments made in Paris a few years ago, when great differences were found—according as to whether the foodstuffs were fresh or stale, green or dry—when they were tested experimentally or taken into the stomach. It was found that fruit sun-ripened on the tree was assimilated more readily than when it was artificially ripened. Fish cooked after being recently caught was digested more promptly and proved to be of better food-value than fish that had been stored. Eggs lose in food-value by storage, and meat in a raw or semicooked condition is digested more easily than when completely cooked or stale. Fresh vegetables supplied their essential salts, but had lost them when they had become stale. And so on.

It follows that a decided difference obtains, and this knowledge can but be of benefit to the patient if it is possible to supply him with fresh food-products, as in the case in those sanitariums which have farms and truck-gardens attached.

Further, the nutritive value of the food-stuffs ingested depends upon the physical and mental condition of the patient. Physicians have learned from experience that meals are liable to disagree when eaten during or immediately after physical or mental strain, and that digestion proceeds better if body and mind are permitted to rest a little before eating; likewise, if the individual eats his food with pleasure, he will assimilate it more freely than he will if he feels aversion for his food.

This latter point deserves greater attention in sanitaria, where the rotation of meals and of their menus very frequently is established too definitely and where in consequence the serious disadvantages of routine make themselves felt with particular force. The fact that the patients get very tired of the ever recurring sameness in their foods and beverages not only is productive of much complaint on their part, but of actual harm to them, because circumstances prevent the food being ingested under conditions that assure its best utilization.

In those institutions in which the patients are trained, under careful supervision, to do a definitely graded amount of work or in which, as Doctor Muthu relates, patients are permitted exercising, camping, and so on, the zest for food is much augmented and the feeding-problem, a difficult one at best, is simplified. In this matter of feeding, in the treatment of tuberculosis, half the battle is won if the patients can be brought to eat with pleasure and to digest and assimilate their food completely.

ATROPINE DIAGNOSTIC OF TYPHOID AND PARATYPHOID INFECTIONS

In a study of the various cardiac irregularities met with in typhoid and in paratyphoid fever, that was undertaken by Captain H. Fairley Marris, of the medical service of the British expeditionary force (*Brit. Med. Jour.*, Nov. 25, 1916), special attention was devoted to the relatively slow heart-rate which commonly prevails in this group of fevers. It was found that in each of these fevers the rate of a slow-beating heart hardly was accelerated by the hypodermic injection of 1-33 grain of atropine sulphate, while in normal persons and in patients ill from other diseases quickening occurs as an almost instant effect. The author so constantly observed the failure of the heart to respond to atropine in all cases that were bacteriologically proved to belong to the typhoid-group that he began to utilize this phenomenon for diagnostic purposes. He proceeds as follows:

At least one hour should intervene between administering the atropine and the last meal. The patient should lie horizontally and must keep perfectly quiet. Then the pulse rate is recorded minute by minute until found to be steady; ten minutes usually will suffice. Now 1-33 grain of atropine sulphate is injected hypodermically, preferably in the triceps region, so as to ensure rapid absorption. The patient now must remain absolutely quiet for twenty-five minutes, when the pulse is counted as before, until it is obvious that any rise which may have followed the injection of atropine has passed away and that the rate is falling to a lower level—which will take about fifteen or twenty minutes.

In an actual reading cited by Doctor Marris, the mean of the pulse-rate in the first series of observations was 68, in the second series of observations showing an average of 94, that is, the atropine caused an increase of 26 beats per minute. As an arbitrary rule, the author accepts an increase of not less than 20 beats (following the atropine) as indicating that the patient probably is not suffering from typhoid fever or one of the paratyphoid series; while, if the pulse beats at all faster, up to, say, 10 beats in the

minute, this fact is taken as suggestive of infection by one of these germs. A difference of more than 10 and less than 20 beats a minute makes the interpretation uncertain and necessitates further observations a day or so later.

An analysis of 200 cases in which both the bacteriological and the serum diagnosis was established disclosed that in 36 in which either typhoid or paratyphoid (A or B) fever had been definitely diagnosed, the atropine-reaction was present in 34; it was poorly marked in 1, and entirely absent in 1—the latter, in which the pulse-rate never was relatively slow, terminating in death.

In 58 cases in which there was positive agglutination, the reaction occurred in 45 and was absent in 13.

In 101 cases declared to be neither typhoid nor paratyphoid (A or B) fever infection, the atropine-reaction was present in 8.

Finally, in 5 cases, in which after a critical bacteriological examination, the subjects were declared to be carriers, a reaction never occurred, and from this last observation, the author concludes that the atropine-reaction is indicative only of active disease.

One marked feature of the test is, that individuals suffering from an infection with bacilli of the typhoid-group, display a remarkable tolerance of atropine and that the other effects—for example, thirst, pupillary changes—apparently are in abeyance. It also seems probable that the test may be applied indefinitely.

Although the use of atropine for the purpose indicated by no means has been clinically established, it nevertheless is interesting and possibly may prove of value in cases where a bacteriologic or serum diagnosis of typhoid, or paratyphoid fever cannot, for some reason or other, be carried out.

NOTE ON THE VALUE OF HEXAMETHYLENAMINE IN AURAL SUPPURATION AND IN MENINGITIS

It has been stated by various experimenters that after the administration of hexamethylenamine (or "hexamine," as it is called in English journals) this substance may be found, not only in the urine, but in the bile, pancreatic juice, saliva, milk, and the discharges of the nose and ears; also, in the synovial and cerebrospinal fluids. The correctness of this somewhat sweeping assertion has been questioned, because hexamethylenamine is split up only in an acid medium, and the resulting antiseptic compound—formaldehyde— does not form in fluids or in media that are alkaline. Consequently, it was extremely doubtful whether hexamethylenamine may be demonstrated in ear discharges and in normal cerebrospinal fluid, since these are alkaline.

In an investigation undertaken for the purpose of determining this question, Dr. Douglas Guthrie (*Brit. Med. Jour.*, Sept. 30, 1916) reasoned that, if hexamethylenamine actually appeared in discharges of the ear, its decomposition and consequently its antiseptic action could be favored by the introduction of weak acids into the ear, just as intranasal lupus is treated by giving iodides by the mouth and afterward applying solution of hydrogen peroxide locally. It is known that in meningitis the reaction of cerebrospinal fluid changes from alkaline to acid, a change that would appear to favor the action of hexamethylenamine.

Four persons suffering from suppurative otitis media, patients in the ear and throat department of the Royal Hospital for Sick Children at Edinburg, were given, by mouth, hexamethylenamine in diluted solution. No local treatment was administered. In all these patients, either hexamethylenamine or formaldehyde appeared in the urine, but not once could either substance be detected in the ear discharge, notwithstanding that the drug had been given in fairly large doses, and, indeed, symptoms of intolerance have appeared in two of the subjects.

Contrary to the prevailing opinion, the results observed by the author appeared to indicate that hexamethylenamine either does not make its way into the cerebrospinal fluid at all or, otherwise, in such small amounts as to be without therapeutic value. The author believes that intradural injections of the drug may, conceivably, have some effect upon the meninges near the site of the injection, but he is convinced that its internal administration is useless.

ARE WAR-EPIDEMICS SPREAD BY CONTAGION?

The question embodied in the headline has been discussed in the *Berliner Klinische Wochenschrift* (1915, No. 51) by Professor Menzer, who arrives at the conclusion that the spread of war-epidemics—particularly when affecting large numbers suddenly at certain seasons—can not be satisfactorily explained alone by the assumption of contact-infection from fomites. While this latter fact is unqualifiedly admitted, nevertheless,

Menzer is convinced that the sudden widespread breaking out of war-epidemics first of all depends upon a damaged condition of constitutions of the people involved, as the result of the manifold abnormal influences of war-life acting upon them.

Menzer then puts a pertinent question: In view of the uncertainty latterly developed as to the differentiation between the various groups of typhoid-, paratyphoid-, dysentery-, and colon-bacilli, to what extent may it be possible that, in the presence of constitutional lesions of the intestinal mucosa, normal and ordinarily harmless microbes inhabiting the digestive tract, as well as related saprophytes introduced at such juncture, become pathogenic under these circumstances and assume the character of those recognized as specific incitors of a given infectious disease? In this connection, the author points out how very uncertain is the diagnosis of typhoid fever, and that it must be made with great caution.

A PLEA FOR MALE NURSES

In *The New York Medical Journal* for June 24, Dr. P. Samuel Stout, of Philadelphia, refers to the fact that it is sometimes almost impossible to secure nurses for private nursing, pointing out at the same time that nowadays fewer young women show a desire to take up the profession of nursing.

The solution which Doctor Stout proposes to remedy the existing difficulty is not only logical, but is one so evident that it is strange that it should not have been presented long ago. On the other hand, since nursing has always been held to lie peculiarly within the province of women's activities, Doctor Stout's suggestion offers a "comeback" to the increasing invasion by women of fields that have been held to belong to men.

When it is suggested that young men ought to take up the vocation of nursing, neither anything new nor any radical departure is proposed, because, in addition to the various religious nursing-orders, male orderlies have for years formed an essential part in the personnel of hospital-wards for male patients. The suggestion is new in so far, as the profession of nursing is to be adopted by men as a lifework, instead of as a temporary occupation, as it is so frequently is the case in women nurses, who merely seek a means of support until they have found a husband.

Doctor Stout very correctly points out that it ought to be attractive to many a young man to select as his lifework an occupation in which he reasonably might expect to earn at least four dollars a day, in addition to board and lodging; while most certainly greater advantages would present themselves than when working in a department-store or even in a bank, in either of which the chances for advancement are decidedly slim. Thus, in illustration, Doctor Stout refers to two men who have been nurses, one for twenty-three years and the other for seven, and in that time they have practically never been out of work, and both have homes and families, one even owning an automobile. Getting married has not in any way affected these men's work. The same is not true of the woman. When a woman nurse marries, as a rule her work as a nurse ceases. A man may marry, but he goes right on with his nursing, just the same.

Another thing. A young man may be considering taking up the study of medicine, but is not just sure whether he cares for that career. Then would it not be better for him to take up nursing first, to find out whether he likes to be around the sick, instead of attending a medical college, only to discover after finishing his course and entering practice that the work is utterly distasteful to him?

Could it not, in some way, be arranged that the young man taking a course in nursing might have his last year in the hospital credited as equivalent to the first year in medical college, so that he would need only one additional year of premedical training to admit him to the medical course? This would not militate against the requirements of the American Medical Association calling for two-years' attendance at college. Ought we not in this way secure young men eminently fitted for medicine, better, indeed, than some of the rich men's sons, who take up medicine simply because they seem to be unfit for anything else?

With the two or three years' training as a nurse and one year of premedical training, the young man ought to be well prepared to enter medical college, while this experience would also provide a very good way for an ambitious young man of slender means to work his way through the medical college.

It does seem to us that here is an excellent field for young men who for some reason or other are not in position to engage in a paying business or to enter a profession. In the field of nursing, just as in any other, there always are presented opportunities to excel. Many male patients who require personal attendance travel widely, and naturally their nurses would have an opportunity of seeing

other countries and different people. The work of nursing is dignified. It is good work and affords as much opportunity for personal satisfaction, even for gratifying ambition, as does any other work that is done well.

We are inclined to think that in the future the male nurse will be as much of an institution as is now his sister of the cap and stripes.

THE EXTERMINATION OF FLIES

A recent report of the chief of the Bureau of Entomology to the Secretary of the U. S. Department of Agriculture directs attention to the demonstrations of the bureau specialists that the breeding of flies in manure can be prevented by adding to it calcium cyanamide acid phosphate, which at the same time increase the fertilizing value of the manure.

This is another instance of excellent and far-reaching work done by the Government through the Department of Agriculture, in all phases in which improvements can be made and in directions in which not only the productivity of the country but also the safety of the humans as well as animals can be promoted.

We may be irritated and use "language" when we read about pork-barrel legislation, but we can always console ourselves with the indisputable fact that Uncle Sam spends a whole lot of money on things that are distinctly worth while, and of general benefit, and also that he gets his money's worth out of a great many of these undertakings.

GRAFTING WITH FROG'S SKIN

When in wounds associated with a large loss of integument it becomes desirable to undertake an operation of skin grafting, in order to further the closing of the wound, it often is very difficult, if not impossible, to secure the necessary cuticle, either because there are no donors or because the available material is not suitable. As far back as 1886, Captain H. W. M. Kendall put into practice the idea of applying grafts of frog's skin to granulated surfaces. This was in India—at Chunar, Bengal—where some of the men were affected with ulcers of the legs, more or less indolent of character. The results of the operation were so satisfactory that the method has been revived, as many cases of injury at the front are occurring in which skin grafting is necessary.

The large number of open granulating wounds, caused chiefly by shrapnel, which are slow in healing and in which a contracting scar is likely to give possible inconvenience later, because of position, friction, and the like, induced Captain Kendall to resort to this method of grafting. He reports four cases in British soldiers in which the wounds, usually produced by shrapnel, varied from 1 1-2 inches to 4 inches in length and from 1-2 inch to 1 1-2 inches in breadth.

The ideal wound to graft, Kendall says, is flat, does not suppurate, and does not show excessive protuberant granulations. The rapidity with which the wound commences to heal after the grafts have successfully adhered is in marked contrast to its sluggishness before the implantation.

The wound having been gently cleaned without the use of antiseptics and as gently dried, the loose skin on the inner side of the frog's thigh is carefully pinched up in a dressing-forceps, snipped off with scissors, spread out, then applied, with its under surface to the wound. A strip of gutta-percha tissue smeared with some non-irritating soft emollient is then placed over it, fixed in position at its ends by adhesive plaster, and a dry dressing applied over all. The whole dressing is gently removed in three days, when the site of the graft will be revealed as a purplish spot branching outwards to the periphery of the wounds. A similar dressing is applied and not disturbed for two days, to avoid unnecessary interference; after which the wound may be dressed daily, without the gutta-percha tissue, with some simple non-irritating ointment, such as boric acid, until healing is completed.

In addition to leaving a supple scar, this method has the advantage of implanting skin free of diseases possibly conveyed in human skin. The reason for not using any antiseptics is, to avoid destroying the delicate epithelium formed over the grafting in the same way in which injudicious antisepsis may render a vaccination inert.

This method of grafting with frog's skin seems to promise useful results in many kinds of slowly healing sores and varicose ulcers, burns, large abrasions, and in various other losses of skin in which a soft and pliable integument is desired. The method is sufficiently simple to be applicable without difficulty.

Miscellaneous Articles

The Broad Indications for Echinacea

MORE recently, remedial agents of botanic origin again are being recognized as acceptable. The plant-drug once more is being given a place beyond mere tolerance as an empirical and somewhat questionable agent, demonstrated as of certain value only in the case of the alkaloidal salts of a few species of compelling attention and instantly visible gross physiological action. Among the phanærogamous plants, the order of the compositæ comprises the greatest number of families, and, again, among its over one hundred American genera we find the names of many plants of recognized medicinal worth, including, for example, eupatorium, inula, lactuca, taraxacum, and matricaria; however, the undeveloped possibilities of this family of native plants are vast.

From among this great variety, I desire, today, to take up for consideration only echinacea angustifolia, botanically classed as brauneria, and known as blue coneflower in the vernacular. There are four species of brauneria, all closely related and having bracts of varying shades of purple, with the exception of the yellow brauneria paradoxa.

Brauneria (echinacea) angustifolia somewhat resembles the oxeye daisy, but the head is larger and of cone shape (hence, the name), and the bracts are either purplish or almost white. Its range is from Tennessee to Texas and Saskatchewan, and it never is found in other soil than that underlaid by limestone; the typical habitat being limestone barrens and dry slopes. The species most frequently confounded with it is the brauneria purpurea (black Sampson, purple coneflower) of a more southern and easterly distribution.

The part used medicinally is the root (sometimes, though, the entire flowering plant). Its introduction to professional medicine dates back about a third of a century, it first having come into prominence through eclectic practicians, who seem to have acquired familiarity with it through domestic practice. Western tribes of American Indians apparently were the original users, who employed it for snake bites, and probably also for other conditions.

The claims made for the virtues of this weed led to its quite general recognition, and, although remaining nonofficial, it was placed on the market by a number of reliable manufacturing houses, while later a concentrate, echinacoid, was prepared from it; and at present it is receiving, in the form of concentration as well as fluid extracts, rapidly increasing employment in a wide range of disorders that are characterized by blood dyscrasia or infective processes. The drug is a conspicuous raiser of the opsonic index and an antiseptic, local as well as systemic, while exerting a pronounced influence on catabolism.

The physiological action of echinacea in large doses is, to slow the pulse markedly and to cause chilly sensations in the extremities, also to cause a feeling of intoxication. The immediate effect of a liquid preparation is, a decided sensation of warmth and tingling in the mouth, followed by a sense of slight constriction of the throat; these being absent, though, when the solid form is taken directly into the stomach. The bowels are acted upon in a slight degree; the amount and specific gravity of the urine is increased; and some diaphoresis occurs. Thus, augmented metabolism is obviously demonstrated. Some muscular pain is said to be evinced on pushing this drug, but this I have not observed when "proving" on myself or continuously exhibiting to patients in large amounts. At least, any such symptoms have been attributed to other causes. *There are no toxic effects* at all, and there is no record of poisoning.

Full hypodermic dosage I consider safe in the asthenic and unconscious from toxemia. Locally applied, echinacea is quite markedly anesthetic, hence, of value in burns, rhus-poisoning, and other skin lesions, aside from its antiseptic and healing power. No special symptom-grouping is required as a guide for employing echinacoid. It is a powerful systemic antiseptic and wherever any of the

manifold indications of bacterial infection are present, no matter what special resultant symptom-complexes are shown, it deserves first thought as leading remedy or as adjuvant. I know of no contraindications, even in extreme asthenia, where it may be given with the strychnine or other supportive.

Enough laboratory work has already been done with echinacea to show that the leukocyte count is favorably influenced; thus to those familiar with the drug justifying the academic procedure of moving it from the empirical to the rational column. I sincerely trust that extended use of the Arneth count and other laboratory indices will be made by echinacea users and records published, thus satisfying that portion of the profession who demand extended and statistical laboratory, as well as reiterated clinical, evidence of therapeutic worth before making an addition to their armamentarium.

While, as above outlined, the list of diseases in which this remedy is to be considered is as long as that of those of septic origin or accompaniment, in my case, as in that of many others, it won its way by brilliant results obtained in treating puerperal sepsis. So great is my confidence here that it frequently finds employment as a prophylactic in confinement-cases. No harm is done by it, specially in insanitary surroundings. On the other hand, the giving of an agent to aid catabolism and phagocytosis is here most rational.

Under conditions of modern life, the hypothesis that no labor is strictly physiological is, perhaps, well taken. Certain it is that a "germ-proof" accouchement in ordinary home environment is next to impossible of attainment. Hence, it is good policy to have those policemen of the system stimulated and awakened to full activity, that they may be able to arrest the first undesirables of the microscopic or ultramicroscopic world.

With puerperal fever, sapremic or septicemic, echinacea is the paramount drug of reliance. Two grains of echinacoid may be given every hour to effect in serious cases, or the initial doses may be given of a reliable preparation for hypodermic use. Where indications are for leaving gauze in the womb after curetting and where an artificial substitute for suppressed lochia must be supplied by irrigation, a few tablets crushed and worked up with glycerin and water are used to saturate it with, to splendid effect; and a light packing of this kind may be continued as long as the patulousness of the os permits. Later, applications of the preparation, warmed, may be made with the uterine syringe. Other treatment is given as indications arise, but the routine is echinacea.

This treatment gave me splendid results before the introduction of the bacterins, both stock and autogenous, but the aid of every modern resource is imperatively demanded in this dreaded condition, therefore, these means of help should be utilized whenever practicable, while echinacea, nuclein, and calcium sulphide should be the ever-at-hand reliance, for, without them the treatment is by many considered to be deficient in the extreme.

Reaction against overconfidence in the use of salvarsan to eliminate syphilitic infection has come and now adjuvant treatment is again receiving attention as imperative for best results. While arsenical and mercurial compounds, the latter desirable in the form of the protoiodide (because of the indication for the halogen factor) are good, I am convinced that better results will uniformly be obtained by large reliance upon the vegetable "alterative" group. Among these, echinacea holds high place as an antagonist to existing blood depravity and spirochete infection. Combination is made with other remedies having a selective action upon the glandular processes, elimination and general cell metabolism. The list is long, worthy of extended study, and includes irisoid, alnuoid, stillingin, thujoid, and phytolaccoid; these always being combined with tonic treatment as required.

The trench carrying may be done with salvarsan, neosalvarsan or one of the recent *American* additions to arsenic chemistry; the arsenic being continued in the form of its iodide; but, the keynote of continuous treatment is well written in E—echinacea. Syphilitic infection is catholic in manifestation, hence, calling for treatment for any involved tissues, for local flareups, and for resultant symptom-complexes. Attention to the great adjuvant value of the blue coneflower in the field of handling luetics is urged.

In the exanthemas, we have conditions calling for the drug, it being well alternated with calcium sulphide, the latter pushed until the exhalations have the characteristic odor. In diphtheria, give antitoxin in heavy dosage; also give it to the exposed persons, proving nonimmunity by Schick's test; then echinacoid, lobeline, and thujoid are a dependable trinity. Reports on chlorazene, used locally, as an aid are awaited with interest. In typhoid fever, the routine alter-

nation is echinacoid, and the three sulphocarbolates. For insect stings and snake bites, it may be used internally and externally. Begin by injecting right into the wound. However, when at hand when the bite is given, the East Indian permanganate treatment should be the first aid. Follow with large doses of echinacea internally, and echinacoid compresses locally, crushing the tablets and applying with glycerin and water. In burns and other superficial lesions, including rhus-poisoning, we here have an efficient healing and antiseptic agent with an anesthetic action on the injured nerve-terminals. Among other uses, is its local employment in suppurative middle-ear conditions. In the lazy lesions of diabetics, its free use, locally and internally, often will be a very pronounced aid—a most welcome help in the intractable degenerative changes common to this class. In tuberculosis, as in syphilis, vigorous leukocytosis is most important and difficult of attainment; hence, here also is a field for echineceal adjuvancy.

The headway gained by echinacea since its introduction to medical literature (about 1887) is remarkable and has been equalled by few drugs. This is especially noteworthy, in view of the fact of that period of ultraconservatism regarding the use of vegetable drugs. Despite this, it has received much acknowledgment and abundant enthusiastic clinical reports, especially from the general practician, who, with his manifold and divided responsibilities, is always glad to be given new and effective aid requiring simple technic.

Its service in furuncles, carbuncles, and abscesses should be sufficient to give it an important place in our materia medica. Inject a few drops of liquid echinacea into a rising boil, under local anesthesia, and apply a compress wet with the same. If pus has not yet centered, that boil will usually be aborted. If too late for abortive treatment, evacuate and inject the pus-cavity with it, then give echinacoid and calcium sulphide internally. The same line of treatment will be efficacious for carbuncles and in abscesses.

A nontoxic, safe plant-product, with such a record behind it as to suggest to the mind the name of "vegetable bacterin," seems hardly one to be neglected. Comparatively few of the conditions in which its use are beneficial admit even a glance within the limits of a magazine article, and the selection of the subject is made with a sincere desire to have those who until now have neglected this agent convince themselves of its worth by personally investigating it.

A. L. NOURSE.

Sawyerville, Ala.

THE MEASURE OF A MAN

Not hoard of tainted gold nor shallow smile for gain
Should wreathe a man with honor and acclaim.
Heartwarmth toward one that's cold, kind act that dulls a pain—
Unselfish love—should count for human fame.

A. D. HARD.

Marshall, Minn.

CURE OF INGUINAL HERNIA BY THE INJECTION-METHOD

Operative procedures in ruptures of the groin undoubtedly are preferred by doctor and patient alike, with only few exceptions, according to my own experience. The fact that success fails to follow upon operation in a considerable percentage of operated inguinal hernias became obvious to me by the considerable number of persons with operated hernias who applied for nonsurgical treatment.

The following case is typical. The subject was a man 43 years of age, splendidly built, and in good health; only he was troubled by pains occasioned by an inguinal hernia on each side, one of them protruding into the scrotum to the size of a cocoanut, which, when descended completely, caused some difficulty in breathing. When it was put back into the abdominal cavity and he was standing, the upper part of a former wound opened up and permitted protrusion of the abdominal parts, to the size of a hen's egg, showing that union of the operated muscles had not taken place. The right-side rupture protruded only a little beyond the border of the external ring and was not larger than a pigeon's egg.

The patient informed me that he had been operated upon three times for these ruptures. The first operation was performed on the right side, in 1896, at a hospital in Serajevo, Bosnia. Up to the year 1906 that rupture had gradually opened again to the size of a pigeon's egg, without, however, causing much annoyance. In 1899, an operation on the left side, was performed, in an American city, evidently, for the reduction of an acute strangulated hernia; he spent six weeks in a hospital. Very likely the wound did not heal readily, because of suppuration the signs of which still were evident. The rupture soon opened again, so that a truss had to be worn. But, by 1901, this ceased to render satis-

factory service, because of the gradually enlarging opening.

Another operation was resorted to, only to disappoint the poor fellow again, for in two short months the wound was open once more. Several other trusses were tried but failed to give any satisfactory comfort, in fact, caused him considerable pain. Then, at last, he consulted me, in July, 1914.

Inspection made it evident that the wounds on either side had not healed by primary intention and there remained numerous ugly and tortuous scars about 6 inches long and 2 1-2 wide.

The man refused to be operated upon again, and I frankly confess that I should not have liked to undertake it, seeing what the poor fellow had undergone. Consequently, I resorted to the injection-treatment. I have used it in numerous cases, with good success, and to my knowledge have not had a single failure.

The fluid which I employ for this treatment, is made up of the following ingredients, to wit:

Tincture thuja (Lloyd).....dr. 1
Fluid extract quercus alba.....dr. 1
Glycerin.....drs. 2
Water to make.....oz. 1

I use several days for the preparation of the fluid, run it through the filter, let it stand for a few days, and filter again until I get a clear solution that is free from any precipitate.

Before injecting this fluid, I produce local anesthesia—and I may say that there is none better for this purpose than anesthaine, being reliable and without danger. For the injection, I make use of a long and rigid hypodermic cannula which I introduce along the inguinial canal (using my finger as a guide) up to the border of the external ring, then inject a few drops, just enough to be able to spread it a little by gentle massage. Then the truss is adjusted again, and adhesions are bound to follow that close up the opening more firmly than can be done by an operation.

The beauty of this procedure is that you can repeat it as often as is necessary and be certain of your results, while neither hurting your patient nor confining him in bed.

I always take great care to avoid even the slightest pain, and therefore the patient will never refuse to take an injection as often as is necessary; besides, the painless treatment makes it more pleasant both for the doctor and patient. Take all the precaution you would in a surgical operation, though, and watch the results.

In the present case, one injection was sufficient for the small right-side rupture, while four had to be given on the left side, in the large ruptured parts, each after an interval of one month.

After a lapse of two years, the patient reported again and still was in perfect condition, save for the ugly scars, the result of the unsuccessful surgical operations. There is not the slightest indication of its opening now, and the patient seems to be cured and well satisfied.

E. H. Bromund.

Duluth, Minn.

THE NEURASTHENIC

When I returned to camp, the guide was starting the evening fire and humming to himself:

"Thar's a skeeter was a-sittin' on a stump—." I interrupted the allegory, to tell him about a more or less unexpected "yellow streak" I had shown that afternoon upon suddenly eventuating into the presence of a big female brown bear and her two cubs.

The guide stooped and took a blazing stick from the fire, with a practiced movement applied it to the bowl of his pipe, and puffed reminiscently:

I don't deem that no yaller streak—
  It aint—it's only wisdom, son,
To handle b'ars a whole lot meek
  When you all packs a scattergun.

Once I meets, in the Saddlebacks,
  A big b'ar we names Bonypart,
From which exalted spot my tracks
  Would av'rige thirteen feet apart.

He gits up on his hunkers some
  An' shows a glad an' toothful smile,
An' I dont none recall my gun
  Ontil I packs it half a mile!

But what you tells brings back to me
  A feller I onc't guides up here—
Which, I esteems, you'll never see:
  A cayote, more consoomed with fear.

Born in New York (which sure was tough),
  He early loses all his grip
Whar'on they gives him dope enough
  To sink a fust-class battleship.

The docs back East locates his cough
  While they're dognosin' on his case—
An' figgers he'll be better off
  If he is at some other place.

Thar'on his Mah-mah writes to me
  (She picks me fer the son's drynurse);
Which, from the way it reads, I see
  I'll better bring along a hearse.

But when I notes this candidate
  Fer health a-gittin' off the train,

I reckons that his blissful fate
Might have to be revised again.

He notes me with a look of pain.
My welcome grin brings forth a screech.
He totters back, to jump the train,
Which it glides safely out of reach.

I slides my gun back in its place,
When I notes he's just filled with awe,
An', throwin' in his leather case,
I orders him to hit the straw.

Soon after thar begins a row
An' keeps a-goin' fierce, ontil
I gits it thro' my skull that now
Is his next time to take a pill.

He takes one, then I strops him down
An' heaves his bottles overboard.
Thus occupied, I lets him drown
Quite some while we are in the ford.

His yells arousin' me in turn,
I lifts him gently on the seat
An' lulls him with a soothin' yarn
That snakes is chasin' us fer meat.

* * * * * * * * * * *

I notes his color on the way;
His lungs is sound—that's plain right off—
Which, if you asts me, I should say
He's got a sort of liver-cough.

Next day, at camp, he searches out
An' gloats upon a fervid page
On which some doc explains about
A malady that's all the rage.

He stops to give himself a thump—
Some sudden like a dog with fleas—
An' anyone can see the gump
Is chasin' down some new disease.

I steals up close, an' notes a glass
Protrudin' from his hopeless face,
Thar'on I lightly treads the grass
An' beats it fer some healthful place.

I hesitates beneath a tree,
An' when I takes a searchin' look,
Just as I fears, thar clings to me
The invalid's big doctor-book.

The name has got away from me—
It's some long-handled to recall—
Nine times I walks around that tree
While I'm deecipherin' it all.

Thar'on I throws it to the fish.
If it should happen that them trout
Appreciates his dope, but wish
To write thar own directions out.

I'm strong fer pills, you understands,
In civ'lization's crowded sp'ere,
An' doctor-books—in proper hands,
Which I don't savvy none up here.

That eve'nin', while he's shakin' down
The glass tube which I names before,
It accidental hits his gown
From whar it glances on the floor.

He has along a extry one,
An' when I asts him how that broke
He goes to show me how he done—
An' busts it at a single stroke.

Thar'on he r'ars, an' t'ars, an' rants,
An' claims I'm guilty of the crime.
I only grins; an' deems his chance
Is gittin' better all the time.

* * * * * * * * * * *

At fust he fears most everything:
He fears the cold, an' fears the heat,
He fears the little 'skeeter's sting,
An' acts like he's afeard to eat,

He fears the bug, an' fears the worm;
He's what you calls a hyderphobe,
An' says in water thar's a germ
That looks some like a mikerrobe!

Accordin' to my plans, I smile,
An' boost things in a cheerful way;
From which it gits so after while
He b'leeves 'bout half of what I say.

Thar'on I notes improvements fast—
His hide gits tanned a muckle-dun—
An' one day he comes up an' ast
If I thinks he can shoot a gun!

I grins in spite of my regret
That thar is any man alive
Which never pulls the trigger yet
On some ol'fashioned forty-five.

Wall! That night I takes down a gun
An' gives the dude a brief outline,
To sort of show him how it's done—
I sure had ought'er took more time.

It happens thus! While I'm asleep
He chucks another load in thar,
An' then sneaks forth, to take a peep,
An' see if he can find a b'ar.

The moon is shinin' kinder dim
An' he aint no ten rods from the place,
When a b'ar riz up in front of him
An' swipes him some across the face.

Game kid! He just backs off fer room,
Then takes a snap-shot with the gun,
An' when I hears the loud ker-boom,
You bet, I makes a record run.

When I emerges from the shack
An' takes a searchin' view around,
The dude is turnin' airsprings back—
The b'ar is dead thar on the ground!

Say! if his Mah-mah just could see
The dude when he comes into view!
He's skinned an' bloody to the knee,
His shoulder's out of j'int some, too!

Of course, in time salve heals his face,
The skin grows back onto his frame,

His shoulder goes back into place,
But somehow he don't look the same.

He ain't the same, I thinks, by jings!
An' day by day I thinks it more,
As I notes him a-doin' things
He always fears to do before.

He eats big! Fishes some an' hunts!
An' frosty mornin's takes a swim!
All which, an' similar outdoor stunts
Sure helps to make a man of him.

An'—not to make no aimless boast—
From whar I'm sittin' I can see—
What helps that invalid the most
Is that big b'ar-fight—B'leeve *me!*

J. A. DUNGAN

Greeley, Colo.

QUICK RELIEF FROM GALLSTONES

Just now there came into my office a school teacher, a lady of perhaps 28 years, who was suffering from an attack of gallstone-colic. The pain was almost unbearable; she could neither sit nor lie down, but continued walking about and moaning. She was taken suddenly on the street, had vomited frequently, and, being a stranger here, had called upon the first physician she could find. She explained that she had been operated upon for gallstones six years ago, when two very large and some small ones were removed, and that she had not had an attack in several years.

She fully expected that I would have to give her chloroform or an injection of morphine; in which, however, she was mistaken. Instead, I caused her to chew between the front teeth one granule of nitroglycerin (glonoin) of 1-250 grain, and immediately afterward two granules of hyoscyamine of 1-250 grain each. In five minutes, I repeated this dosage. Also, I dissolved in a teacupful of very hot water 10 grains of magnesium phosphate 3x and gave her of this one teaspoonful every five minutes. In less than half an hour, the woman was free from pain and went happily on her way.

Score another victory for the granules!

C. S. COPE.

Detroit, Mich.

ALCOHOL

Dr. George D. Swaine's article in CLINICAL MEDICINE for December is amusing, indeed, especially as to the second chapter of John. I would ask him why wine was used, if not to add cheer to the occasion. Would the Christ have praised water as the best, if set before the guests? Let the Doctor read Leviticus, 10th chapter, 9th verse. Any alcohol there? Another part of the Great Book says: "They were to buy strong drink and drink it in the presence of the Lord."

After a practice of fifty years, I must say that many a patient will die in the crisis of pneumonia solely for want of alcohol. I just had an experience of that kind, where other stimulants were being used. The patient vomited after each dose; but, behold, one-third glassful of whisky was retained and the effect was instantaneous. And I could multiply examples.

There has been nothing yet invented to take alcohol's place at the bedside.

W. S. CLINE.

Woodstock, Va.

GOODLYE DOCTRINE AND INSTRUCTION

An excerpt from a poem by John Halle, Chirurgyen, 1564

When thou arte call'd at anye time,
A patient to see,
And dost perceaue the cure too greate,
And ponderous for thee:

See that thou laye disdeyne aside,
And pride of thyne owne skyll,
And thinke no shame counsell to take,
But rather wyth good wyll

Gette one or two of experte men,
To helpe thee in that nede;
And make them partakers wyth thee,
In that worke to procede.

For, in so doinge, thine honestye
Thou shalte well kepe and saue;
Also thy patiente thereby
Right greate comforte shall haue.

By this meanes, thou may'st haplye learne,
Ryghte seldome sene before;
Of thee, or hym, whych fyrste thee taughte,
Thoughe thou haue cunnynge store.

And also, if ought goe a wrye
Or hinder in thy cuer,
The one maye mende the other's faulte,
While friendship dothe endure.

The wounded or sore man also,
Shall hauve no cause to grudge
In you suche uniformitye,
Whyle he maye see and judge.

But one thinge note: when two or more
Together joyned be
Aboute the peynfull patiente,
See that ye doe agree.

See that no discorde doe arise,
Nor be at no debate;
For, that shall sore discomforte hym
That is in sycke estate.

For, noughte can more discomforte hym
That lyes in griefe and peyne.

Than heare that one o you dothe beare
To other suche disdeine.

Wherefore what so ye haue to saye,
In thinges about your arte;
Let it be done among yourselues,
In secrete and a parte.

Wyth one consent uniformlye
Comforte the wounded man;
But, unto some good frende of hys
Expresse all that ye can.

See thou disprayse none uther man,
His error though thou knowe;
For, sure an other for thy plage
Shall then like curtsye shewe.

[The booklet of verses from which the above is reproduced from a poem by John Halle issued in a limited edition and printed for Paul B. Hoeber (the well-known New York publisher) and his friends, from types arranged and composed by Frederic and Bertha Goudy, at the Village Press, Forest Hills Gardens, New York, in December, 1916.

Mr. Hoeber not only has brought out a goodly number of worth-while, live medical books, but has a happy eye for quaint and attractive old prints. Among these, we remember with much pleasure his edition, of about one year ago, of that rare old classic, "The Goldheaded Cane."—ED.]

TEAM WORK

No ox we know can make a team;
No bow unbent make arrow fly;
No boat can row itself upstream;
No deed performed without a try.

Drop blends with drop to make a rill;
Rill meets with rill to sing in brooks;
Thought grows with thought
To word and will,
To crystallize at last in books.

Team work and a well-strung bow;
Forces that make a purpose show—
Ah! gen'rous help will make a man
Do just the very best he can

C. S. COPE.

Detroit, Michigan

THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

The Cancer-Control Society, which was formed under the auspices of several national medical organizations at the meeting, in 1913, of the Congress of American Physicians and Surgeons, presented a report of its organization and activities at the meeting of this Congress held in Washington in May, 1916. The report presents a summary of the progress made during the three years following the formation of the Cancer-Control Society, in its efforts "to disseminate knowledge concerning the symptoms, diagnosis, treatment, and prevent on of cancer, to investigate the conditions under which cancer is found, and to compile statistics in regard thereto."

The membership of the Cancer-Control Society consists of physicians and laymen, among the former being delegates appointed by ten constituent medical societies of the Congress of American Physicians and Surgeons. In accordance with the purpose of the Society, a campaign of public and professional instruction was outlined and initiated, and is being vigorously conducted; while for the purpose of scientific study the collection of statistical data has been started on a large scale. The society does not contemplate special experimental research or the supporting of hospitals or clinics including the care and treatment of individual patients, but it devotes a large share of its direct efforts to furthering the work of other organizations and forces in position to render assistance in local fields.

As is but natural, the Cancer-Control Society desires, first of all, the endorsement of the medical profession, and this has been extended to it in a far-reaching manner. It aims to cooperate with the medical profession, with the various boards of health, as well as with nurses, social workers, insurance companies, and all other organizations that are interested in the cancer-problem, for the purpose of gathering and thereupon popularizing all possible information in regard to cancer, and likewise to extend its efforts in the direction of preventing this growing menace.

USE OF SCHAMBERG'S SOLUTION IN VACCINATION

This solution, used by Schamberg as an application to the skin to prevent the inflammatory complications which so often follow vaccination, is composed as follows:

Picric acid	Gm. 4
Iodine	Gm. 1
Alcohol	Gm. 100

Paint over the site of the vaccination forty-eight hours after the operation and repeat once daily.

We were induced to use this solution during an outbreak of smallpox during last summer, on account of the frequency of serious complications in other years, due to the lack of cleanliness among so many of the vaccinated here in southern Mexico.

We used the arm-to-arm method of inoculation, choosing the arms of children from

one to three years and of a perfectly healthy aspect. In this way, we vaccinated 1115 persons, 80 percent of whom "took." In those already vaccinated, only 50 percent were successful. It was curious to note that three persons who had had smallpox took, thus showing, what is very likely to be forgotten, that it is not so very uncommon to meet with cases on which one attack of smallpox has not conferred a complete immunity.

In no case were any antiseptic precautions taken, though the parents were advised to bring their children in a clean condition to be vaccinated—an advice by no means followed by all.

All were told to return when the arm began to hurt, much later, of course, than the forty-eight-hour period which Schamberg advocates. Most of those vaccinated presented themselves between the fourth and the seventh day. All were then painted with the solution and directed to return daily for similar treatment.

In no case were there any complications nor did we have a single case of axillary abscess to deal with, the inflammatory area being strictly limited to the site of the vaccination and the areola around it.

We found that a single vaccination was not sufficient in the case of those exposed daily to the contagion, but in these cases we strongly advised daily vaccination, on three successive days, for the family immediately concerned. We base this idea on the fact that there are many individuals who fail to take after one or even two careful vaccinations, done with absolutely fresh human or bovine virus, but whose resistance breaks down on the third attempt. In these cases, precious time may be lost and they may develop the vaccination pustule and the smallpox at the same time, as happened in one of our cases.

As we all know, to produce any disease, not only must the pathogenic organisms be present and the subject susceptible, but these pathogenic organisms must be present in sufficient amount. Vaccination is no exception to this rule, and, as a curious fact, it may be noted that, if a patient very recently unsuccessfully vaccinated be revaccinated, the pustules may appear sometimes on the site of the unsuccessful vaccination as well as on the area of the second vaccination. Hence, we are of the opinion that each person immediately exposed should be vaccinated three times on three successive days before being considered immune. One of our subjects who had had smallpox developed a vaccination pustule after the third inoculation.

We do not, of course, advocate arm-to-arm inoculation where fresh bovine virus is obtainable; but when this is not possible, we believe the method to be quite safe and certain, provided due precautions are taken against hereditary syphilis. This latter disease should be apparent during the first year.

We further believe that Schamberg's solution will be found an excellent one for applying to the eruption of smallpox during the early vesicular stage and daily until convalescence, but, as we had only 5 cases, we have not sufficient experience to go on as yet. It is generally conceded, however, that picric acid is an excellent protective for the skin, causing keratization of the epidermis, while iodine is an antiseptic of the first order. For these reasons, we believe that Schamberg's solution might well be more generally employed.

A. K. Moilliet.
Minatitlán F. Carreno.
Veracruz, Mexico.

INCIPIENT CANCER OF THE BREAST

Yesterday I was called to see a married woman, 37 years of age, and found her suffering great pain in the left breast. There was no enlargement or swelling, but she told me that great waves of pain passed through the gland and that these weakened and sickened her. It seemed, she said, as if a great hand with fingers like needles was grasping and pressing the breast. There was no evidence of chills or rise of temperature. She told me of several miscarriages and two curetments. and of having lost flesh and strength lately, This, coupled with reverses in finances, had caused great mental depression.

The only objective symptom noticeable was the very striking appearance of the tip, or apex, of the nipple—that is, the area surrounding the milk-ducts—the latter appearing like the center of a flower, of the pinkest red that I ever saw. The other breast was normal.

The patient is a trained nurse from New York City, has nursed in Missouri (St. Louis), in Michigan, and in other states. She expected, of course, that I should give an injection of morphine, for the paroxysms of pain were simply unbearable.

Seeing that this was the first manifestation of a cancer of the breast, I put her on the following treatment: One granule of glonoin (1-250 grain), to be crushed between the

front teeth and allowed to be absorbed from the mouth. Immediately after and taken in the same way, two granules of hyoscyamine of 1-250 grain each. This, by the way, is proper treatment in any case of sickness, as it dilates the capillaries and prevents concentration of blood at any one point. Immediately after that, and at 5-minute intervals, 1-10-grain calomel tablets were given, allowed to disintegrate, and not washed down with water. Then she had to take, at once, one tablespoonful of epsom salt in a teacupful of hot water, followed by a glass of cold water.

Calomel and a laxative saline or the abundant liquid flush-out of the bowel, which is nature's drainage river.

Now for the specific treatment—the preceding was but preparatory. I put 5 drops of mother tincture of pulsatilla into half a glassful of water. This for the cancerous condition itself. Into another glass, half full of water, I put 5 drops of tincture of nux vomica. This for its tonic action. (You may smile over the smallness of these doses!) Then the patient was instructed to take one teaspoonful of each mixture, alternately, every half hour.

Result: In sixteen hours, all pain is gone, the nipple is normal in color, the patient is feeling fine.

Had there been enlarged glands or hardness of the breast or axillary glands, I should have added phytolacca to the foregoing. In the incipiency of cancer you will find that pulsatilla will disperse the gathering storm.

These things are worth looking into.

Test them—test them—and let the results tell their own story!

Do not forget, though, that the patient must be watched and safeguarded while the cancer-medicine is being given.

C. S. COPE.

Detroit, Mich.

THE MEDICAL SOCIETY OF THE MISSOURI VALLEY

The Medical Society of The Missouri Valley will hold its 28th semiannual meeting at Keokuk, Iowa, on Thursday and Friday of March 22 and 23, according to the announcement of the secretary, Dr. Chas. Wood Fassett, of Kansas City, Missouri.

We are informed that at this meeting the question will be discussed as to whether it ould be advisable to merge this society with the "Tri-State" Medical Society of Illinois, Missouri, and Iowa. Members of the Missouri Valley Medical Society are urged to attend this meeting, which promises to be one of great interest and importance.

CARTER'S ANTIDOTE: A CORRECTION

Our attention has been called to an error on page 7, column 2, of CLINICAL MEDICINE for January, where the composition of Carter's antidote for mercuric-chloride poisoning is given as sodium phosphite, 0.036 Gram, and sodium acetate, 0.24 Gram. The amount of sodium phosphite should be 0.36. Do not fail, please, to make this correction in your copy of CLINICAL MEDICINE—right now.

TEMPORARY RELIEF FOR CHILBLAINS AND CORNS

Responding to your inquiry regarding my treatment for chilblains, I take pleasure in assuring you that, while I cannot suggest anything sure to effect a permanent cure, I can offer your readers a treatment this is dependable and simple in positively affording temporary and immediate relief, and which may as successfully be repeated with each annual recurrence of this annoying and often painful trouble. Here you are:

After thoroughly bathing the parts affected in hot water, apply with the finger the following mixture:

Camphophenique.....dr. 1
Balsam of copaiva.....drs. 7

This should be applied just before retiring, putting on an old sock or bandage to protect the bed from being soiled.

If you prefer not to use the proprietary article named, the same relief can be secured, though hardly quite as promptly, by substituting the official phenol-camphor.

And here is one for painful corns:

Bathe the foot thoroughly in hot soapsuds After drying, with a sharp knife, trim away the callous portion of the corn, stopping short of drawing blood. Then, with an applicator (or, on the part of the patient, a match) dipped in pure phenol (carbolic acid), apply this to the top of the corn and allow it to dry. If this is repeated once a week, the corn will cease to pain—and this, too, can be repeated over and over.

G. G. THORNTON.

Lebanon, Ky.

EUCALYPTUS FOR CHILBLAINS

In your issue of February, someone asks for a reliable remedy in cases of chilblains.

I have found an invaluable remedy in oil of eucalyptus. I apply it with a soft brush or the finger to the swollen and painful parts. I use it night and morning, and find that a few applications produce the desired effects.

GEO. H. WILLIAMSON.

Warren, Pa.

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[The French treatment of burns with a paraffin-resin mixture (Ambrine) is being applied in bad cases of chilblains and frostbite with really wonderful results. The melted paraffin is sprayed or painted on to the affected surface at a temperature of 140-150° F., then a layer of cotton lint applied, then more of the paraffin sprayed on. If the skin is broken, the "weeping" surface is dried carefully before making the application. More about this later.—ED.]

THE ETIOLOGY OF CHILBLAINS, AND ITS NOVEL TREATMENT

The chronic, or recurring, form of erythematous dermatitis (pernio simplex), usually of the feet, ascribed, commonly, to the direct influence of cold, or "frostbite", probably is a vasoneurosis. Usually, with the skin unbroken, it is accompanied by a sense of burning heat, intense itching, and sometimes severe pain. This dermatitis congelationis (another synonym), with its unpleasant symptoms has, for years, been the opprobrium of the medical profession, who has resorted to a multitude of agents for external treatment, while many writers have declared that no successful method of treatment is known. To analyze some of these conditions and to suggest some useful methods of treatment, is the object of this communication. I shall not attempt to exhaust the subject, nor even to refer to commonly accepted causes, the various methods of treatment or the socalled pathological lesions.

Why this condition should recur in cold weather or from a chilling of the body, when it had been absent during the summer months, is a problem that I have never found answered in any textbook or medical journal. Neither have I ever found therein the methods to be described herein, which have been successfully employed by me during the last several years.

The frostbite, the first active cause, altered the chemical, vital, and electrical structure of the tissues, thereby producing an inflammatory action, which always is a retrogression or reversion of type of cell-life, or in other words, one of the forms of degeneration. Under the favorable conditions of a relatively pure-blood stream, the human body, being an adaptive and self-regulative mechanism, would reconstitute the degenerated cell-life, and the parts would be readily restored to a normal, healthy state.

Why this does not always happen, is not difficult to explain. When the blood stream is saturated with deleterious chemical products from excessive amounts and improper combinations of foods eaten and failure to eliminate waste matters from the body, the accumulation of these systemic poisons so damages healthy and more easily impaired cell-life that a normal restoration of tissue can not and does not take place. The methods of living, therefore, keep the cell-life involved in a weakened and impaired state, which even the helpful warm summer is not able fully to restore.

When the cold weather of autumn and winter returns and the surface of the body is chilled and, so, the two or three million sweat-tubes are actively closed, with the consequent failure of elimination of the usual quantity of from 40 or 50 or more ounces of poison-loaded fluid that daily is thrown off, by the body, in the form of insensible perspiration, then these poisons accumulate in the blood stream; reinforced, as they often are, by constipation and also by the failure to drink sufficient water to flush the kidneys and keep the blood stream relatively pure.

The defensive power of the white blood-corpuscles has been impaired, the function of the red corpuscles inhibited, the liver overburdened with carbon compounds, the internal secretions altered and damaged in their activities, and a state of general debility induced; this latter condition being especially felt in the tissues formerly afflicted with the frostbite, and which, for the reasons I have just given, have never been able completely to recover their first state of perfect health.

The first step in the restoration of the parts affected and the relief from suffering is, the purification of the blood stream, by the removal from the body of all agents or substances that have caused and now keep operative the existing condition. This should be begun at once and actively continued, even though measures for temporary relief by local applications are being used. A general anemic condition often is found in these subjects, produced and continued by the before-mentioned poisoned blood stream. And I may point out in passing that a poisoned blood stream, as I have above stated, is

the fundamental factor in nearly every disease.

I absolutely forbid my patient any and every kind of food for twenty-four hours or more, as indicated in the case. Meantime, I give a saline cathartic or a colonic enema, to clean out the intestines; also, I order him to drink water in plenty and often, so as to flush the kidneys, aid the intestines, and help to increase sweating; which latter purpose I further aid by means of aconite tablets 2× one tablet to be taken every ten or fifteen minutes. Under this treatment, all unpleasant symptoms of the local trouble subside when this cleaning process has been well established.

Each doctor has his own pet measures for local treatment; but these can never be curative, serving only to relieve the unpleasant symptoms; the only curative treatment possible is, to remove the chemical agents in the blood that have kept active the pathologic symptoms. If now the blood stream is kept relatively pure, the inherent urge in nature will become operative and the tissues return to normal; and will remain normal.

As a means for the active purification of the blood stream, there is nothing that exceeds in value the abstaining from all food (except water) for a period of from one to ten days or longer; which, if aided by a gentle daily saline laxative, will eliminate, to a large extent, the accumulated poisons.

Certainly, due consideration must be given to age, sex, size, occupation, and other conditions of the patient not only now but during and in the breaking of the fast, and not less during the subsequent feeding of the patient—but this is a topic too large to be discussed in this paper. The usually neglected means for the proper elimination, through the skin, of such deleterious matters as are thrown out by it is all-important, and the drinking copiously of water, to flush the kidneys, skin, and bowels, must not be neglected after the patient has recovered. Frictioning the skin of the whole body every evening, with the open palm of the hand, for ten minutes, to enliven its lazy and sluggish activities, is a most wholesome exercise, but usually neglected, because unappreciated and unknown to many.

The proper selection of foods adapted to the patient is a large subject and cannot be considered at this time; but, it is no more important in chilblains than in all other troubles in which it becomes necessary to establish and maintain a relatively pure blood stream and a vigorous body as the foundation of success in treatment. And right here I desire particularly to emphasize the thought that all diseases come from within, from the condition of the blood stream, and that outside germs are but secondary causes, which never would appear if the first principle of health had not been violated. Medicinal agents always are emergency measures only; and these we are compelled to use, because most people live in such total disregard of physiological and psychological law that their blood is but seldom in good condition. Hence, the large amount of sickness prevailing among the people.

The very important ideas that I have advanced here, relative to chilblains, are also applicable in many other conditions, as, for instance, in the nonunion of broken bones, in the failure of ulcerations to become healed, in the fevers and other diseases when a so-called relapse occurs, as well as in eczema and other skin diseases that do not yield to the standard methods of treatment, for the reason that the inherent powers of nature are hindered by the chemical substances retained in the blood, when they should have been eliminated.

Harmonious functional activity means pure blood of superior quality, and in chilblains as well as in constipation and the other troubles I have mentioned, coarse cereals, fruits, and vegetables, with their cellulose, are not sufficient to eliminate waste. There must go along with it, also, as an absolute necessity, the copious drinking of water—say, 8 to 10 glasses a day—besides a systematic course of physical or muscular exercises, else the functions stagnate, the blood is filled with the impurities of dead cells and waste; thereby vitality being decreased and disease produced and kept up.

In conclusion I will say that I have referred to only a few of the interesting topics suggested by the title of this paper, and I invite severest criticism.

L. A. MERRIAM.

Omaha, Neb.

A PNEUMONIA-TREATMENT

I am sure that no one will be disappointed if he will follow the directions here given for the treatment of pneumonia as I have used it for years without the loss of a single patient.

Begin, by giving the patient a cleaning out; but—and heed this, please—do not wait for the purge to act, lest too much valuable time be lost. Instead, within the first fifteen minutes from the time you see the patient

give a dose of iron phosphate and some sodium sulphate (glauber salt). My method has been, to prescribe at once a dose of milk of magnesia, for the cleaning out and the aseptic condition in which it will leave the bowel. While the nurse is giving this, I dissolve 1 dram of iron phosphate, in 4 ounces of water, in one cup, and, into another cup, I put 2 drams of the sodium sulphate filling the cup with hot water, and direct that a teaspoonful of each be given every fifteen minutes for an hour, then a teaspoonful of each every half hour for four doses, and then every hour after that.

Remember that *time* here is of the utmost importance, and I do not lose one minute.

If the respiration is very rapid, give 1 1-2 grains of lobelia. Then you must look after any old trouble of the heart or kidneys, as you see fit. By and by, when the cough gets quite troublesome, give potassium chloride (and be sure that you do not give the chlor*ate*); and sometimes 1-64 grain of emetoid will help to stop the cough.

This is about the most satisfactory treatment of pneumonia I have so far heard of.

Slight diet, of course, must be enjoined.

The above treatment is splendid for colds, influenza, bronchitis, and chills and fever, all of which are first cousins to pneumonia.

This pneumonia-treatment can be employed for the smallest child, if the dosage is reduced to suit the age. Ipecac, or emetoid, is a specific for children.

In closing, it gives me pleasure to testify that, having been a reader of CLINICAL MEDICINE for fifteen years, I have received much help from it.

CLAIRE ARMSTRONG.

Cincinnati, O.

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[It gives us much pleasure to print Doctor Armstrong's method of treating pneumonia, although our own personal preferences are presented, in the main, in Doctor Wolverton's article published in our January issue. We urge every physician to read this article and Dr. Solomon Solis Cohen's paper published last month.—ED.]

IN THE MATTER OF SELF-RISING FLOURS

The *Journal of the Medical Association of Georgia*, November issue, contains a very interesting editorial relating to the increase of pellagra in certain sections of the South in the last few years. In this connection, the interest of physicians the country over has been greatly aroused by the publication of Reprint No. 333 from the *Public Health Reports*. The article is entitled, "Bread as a Food" and discusses malnutrition in relation to the vitamine content of the food, and in its relation to pellagra. The editorial devotes considerable attention to self-rising flour and its methods of manufacture.

So-called self-rising or mixed flours have been put on the market—especially in the southern states—in which the wheat flour contains an admixture of soda and certain acids, so that it is only necessary to mix a quantity of this prepared flour with water and to apply heat in order to produce carbon dioxide gas for the aeration of the dough. This custom is open to serious objection and is particularly vicious if, as happens often, cheap grades of flour, often bleached, are mixed with cheap leavening agents and if these are adulterated with gypsum. It has been ascertained that the cheaper grades of self-rising flour are sold for even less than plain flour while the price of the more expensive grades is but slightly higher than that of plain flour, indicating that the ingredients which are added to make the flour self-rising must be of cheap quality. This cheapness is further evident when it is realized that in the manufacture of self-rising flour, in the addition of extra ingredients, there is an extra operation which really increases the cost of production. In accordance with the nature of the market for which these self-rising flours mainly are produced—that is, among the poor whites and negroes of the southern states—the cheaper grades of flour are mixed with the cheapest of leavening agents, resulting in a product from which wholesome and nutritious bread cannot possibly be produced.

The employment of self-rising flour is open to many objections which are so evident that they should be sufficient to cause the discontinuance of this article. Under the prevailing methods of milling, the resulting flour is already deficient in vitamines, even in the better grades, and this is the case still more in the cheap grades of flour. Whatever vitamines may be left in the flour deteriorate in consequence of the prolonged and constant contact of the flour with soda, the alkaline ingredient of the leavening agent, and this naturally detracts further from the nutritious value of the material. This objection does not hold if plain flour is added to baking-powder at the time of mixing the dough, because the soda is at once completely

neutralized by the acid ingredient and does not affect the vitamines.

It has been found that the keeping qualities of self-rising flour are poor, particularly in a damp and humid climate and it happens very often that it spoils on the shelves of the grocer and is returned to the mill. Instead of being destroyed, new quantities of the leavening agent have been known to be added, after which the flour was sent out as a fresh product; thus largely increasing the amount of mineral salts left in the food.

Although self-rising flour has been on the market for some time, it has only recently gotten headway among the poor and the ignorant people in certain sections of the South—such headway that in many of the stores in the poor sections plain flour no longer is sold, self-rising flour being used exclusively. It can readily be seen how easy it would be for an unscrupulous manufacturer to prepare an inexpensive "self-rising flour" and still make a big profit on his sales.

There is urgent need that this state of affairs receive attention on the part of the food control officials. There are laws in the South that require labeling of mule feed, so as to show what the ingredients are, what percentage of carbo-hydrates, etc., they contain. But there are no such labeling requirements on self-rising flour. Some of the sacks show what the ingredients are; others do not. If the flour is bleached, it is simply labeled "bleached", and the sack is simply labeled "self-rising". The quality of the flour and the names of the self-rising ingredients are not stated. In short, the law protects the mule but overlooks the human being. Even in feeding Mother Earth—that is in the case of fertilizer—it is required to state just what the fertilizer contains. Certainly, the poor whites and negroes of the South have been overlooked. They deserve more consideration and protection than they are getting.

The necessity of vitamines as constituents of food has been realized fully in recent years since it has been shown that the so-called deficiency diseases, for instance—beriberi and (it is claimed) pellagra—are owing to the absence of vitamines in the food. It is very possible that the frequency of pellagra in Georgia, in Northern Florida and Eastern Alabama may be due, at least in part, to the fact that self-rising flour has the strongest foothold just in these sections; in fact, practically all the "poor white trash" and negroes in the above sections have come to use self-rising flour. The importance of food-stuffs that are deficient in vital constituents has a bearing that is much wider than can be discussed in this place, and the possible connection of such deficient foodstuffs with the prevalence of pellagra is only one instance which, yet, is sufficiently evident and momentous to arouse the attention of those whose duty it is to protect the people, particularly the ignorant, against the selfish exploitation of unscrupulous manufacturers.

TRY THESE BRAN COOKIES

For about five or six months, we have been using in our family bran cookies made according to the following formula, which, I have no doubt, will be welcomed by many readers of this journal, both for home use and to give to their patrons:

Bran	6 cups
White flour	3½ cups
Graham flour	1 cup
Sugar	2 cups
Lard	2 cups
Milk	2 cups
Figs, finely chopped	½ cup
Karo syrup	1 cup
Baking-powder	6 teaspoons
Cinnamon	2 teaspoons
Ginger	2 teaspoons
Allspice	½ teaspoon
Salt	½ teaspoon

Mix well, drop into the pan, shape with a spoon, and put into the oven. This will make 125 cookies.

Use common wheat bran from the feed-store. It is best, besides being cheap. Mazola oil, a recent corn-oil product, 1 cup, may be used instead of lard. It is better and cheaper than lard.

There is no taste of bran, and the cookies are very palatable. One or two eaten after each meal will keep the bowels in fine shape, giving perfect relief for constipation. Moreover, the "children cry for them". We have given this formula to a number of families, who also are using the cookies, to their satisfaction.

I have read CLINICAL MEDICINE from the first number, and am always pleased to see it come to my table.

R. C. HAMILTON.

Chicago, Ill.

[One of our girls made up a batch of these cookies, and gave samples to the "editorial cabinet." They are fine.—ED.]

DEATH OF F. A. DAVIS

We regret very much to announce the death of Dr. F. A. Davis, for many years the

president of the F. A. Davis Company, Philadelphia, medical book publishers. It was the writer's privilege to know Mr. Davis personally, and therefore we can testify to the fine characteristics of this man. He will be greatly missed.

AN OPENING IN CONNECTICUT

There is a good opening for an eclectic physician in Connecticut. Write us and we will give you details.

A CRITICISM OF HIRSHBERG

I have read, with more or less feeling of disgust, the vaporings of L. K. Hirshberg, as printed in your January number, and they so strongly remind me of the account of Jack, in the eighth section of Dean Swift's "Tale of a Tub," that I cannot help but think of this man in that connection.

Judging from many of his articles that I have read, both in professional and lay publications, I do not consider him to be either a successful practitioner or a good teacher for the layman.

It is an established fact that the average practitioner is a fair diagnostician, else he were unable to recognize the simplest departure from normal conditions. He knows that a furred tongue denotes a condition not found in health and, if it appears without other complications, he is "wise to the fact" that it is owing to some derangement of the digestive function; or, if there is present an acute occipital headache, he knows that he has before him a case of autointoxication brought on by the retention of fecal matter; if there is a rise of temperature following a chill, he is aware that his patient is threatened by one of the numerous febrile ills, but, if he is a good physician, his diagnosis ends here, because he will treat the symptoms promptly, and with proper remedies and care the trouble stops virtually where it began, and a named disease is not set up.

It is unnecessary to multiply instances. There may be rare cases where, if the disease has progressed far enough, diagnosis may be difficult, as, for instance, between cholera and arsenic-poisoning. I mention this particular problem, because very recently I was the consultant in a case of this kind. The attending physician and I myself studied the best authorities, but could find no help aside from the chemical and bacteriological examinations; so, samples both of vomit and feces were sent to Washington, D. C., for testing. However, before we got a reply, the patient (a man) recovered under our treatment. An exactly similar case was that of a Mexican woman who lived near to the foregoing patient; but, she died within an hour and a half after the attack. Necropsy being refused, and the tubes carrying the specimens to Washington being broken in transit, the question remains unsolved. However, such cases are rare, and as there are laboratories in almost every large city that are always busy, it is evident that our doctors are making use of them as an aid in their work.

If our traducer had confined his tirade to Osteopaths, Chiropracts, Christian Scientists (socalled), and other unauthorized persons who pretend to treat disease, I might have had some sympathy with his article, but, I know that a large majority of graduates in medicine promptly recognize and are ready to combat properly and successfully most of the diseases with which they come in contact; and statistics contradict Hirshberg's defamatory contentions, for, the death rate in the United States is less than 2 percent of our population.

It is the recognition of the first perturbation and its prompt treatment that makes a successful doctor. If he waits till the symptoms spell some named disease, then, indeed, will he come under the head of 90 to 96 percent wrong—wrong, because he failed in doing his duty at the proper time.

I do not think that your criticism does the subject justice.

W. T. THACKERAY.

Fowlerton, Tex.

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[Doctor Thackeray's strictures are well taken—from the viewpoint of the general practitioner. From that of the laboratory diagnostician and of the clinician, Doctor Hirshberg's assertions are not as absolutely wrong as his critic believes. We are all acquainted with various recent publications of the kind first written (if memory serves us correctly) by Richard Cabot of Boston, in which the clinical diagnoses in a series of cases were controlled by autopsy findings; when it was found that the clinicians had been mistaken, or had failed to detect some important lesions, in a goodly proportion of cases. But, it may be claimed, justly, we believe, that the general practitioner makes a careful diagnosis in the majority of his cases and that he treats his patients as promptly and as efficiently as they will permit him. Very often, the dilatory and *laissez faire* attitude of the patient is at fault if he fails to improve; for, he will neither consult his

physician early enough, nor obey his directions to the letter, nor will he take all the precautions that are imposed upon him.

Nevertheless, as was pointed out in our comment on Doctor Hirshberg's arraignment, we are convinced that he painted matters in far too sable colors and that physicians are more often right than wrong in their care of the sick.—ED.]

GRATIFYING RESULTS FROM THE USE OF EMETINE

Case 1.—Mr. H. M., 42 years old, engineer, contracted tuberculosis, in New York City, in 1912, spent the winter of 1913 in Florida, came home to Athens, Pennsylvania, in the spring of 1913. I was called to see him in June and treated him until his death, in June, 1914. He had the usual symptoms of tuberculosis—cough, hectic fever, anorexia, emaciation, insomnia, extreme prostration, and so on. He was extremely irritable at times, especially if he did not get his rest at night. I used different kinds of soporifics, with varied results.

One morning when I called, he asked me to look at his mouth, as the gums would bleed so easily. He had no teeth on the upper jaw and his mouth was so sore that he was unable to wear his plate; it did not fit, anyway, because of the shrinking of the tissues. All his teeth of the lower jaw were loose and the gums were discharging a bloody, malodorous pus. I immediately began the use of emetine, giving one ampuleful (2 mils, Lilly's) twice a week hypodermically. After giving the sixth dose, the gums were practically well and the lower teeth had become firm. I gave nine injections in all.

The man improved in every way, regained desire for food, slept better, had less fever, was good-natured, in fact, was an altogether different man. He was so much better, he said, that he thought he could eat some good, solid, nourishing food if he had a plate on the upper jaw. So, he sent for a dentist and had an impression taken, and did not mind this any more than does a well person. Unfortunately, he never got his teeth, as the dentist had the misfortune to have his vulcanizer explode while he was at work in his laboratory, this shattering his right arm, and the man died before the plate could be finished.

This patient felt very comfortable after his treatment with the emetine and I was not obliged again to give him a soporific. Of course, the mouth was kept thoroughly cleansed with antiseptics during the time of administering the remedy. To me, this was a most remarkable result from the use of emetine.

Case 2.—Mrs. T., about forty years old, mother of three children, applied for a remedy for headache, when I learned her history. She had been "running down" for two years, had no endurance or strength, and was obliged to keep her bed a part of the time. She had been to several specialists, had been pronounced tuberculous and advised to change climate or enter a tuberculosis sanatorium.

I had just had the experience with the preceding case, and, so, concluded to examine her mouth. I did not discover anything much out of the way, but her history led me to try emetine. I gave her nine doses within a period of nine weeks. She began to improve almost from the first dose and now is perfectly well, after the lapse of two years; never has had a return of the rise of temperature, has been able to do most of her housework and, in fact, is a well woman.

These two cases have been extremely interesting to me, and I hope some other physician will try the emetine treatment when in doubt.

W. M. HILTON.

Waverly, N. Y.

INTRACTABLE ASTHMA CURED WITH BACTERINS

I have greatly enjoyed every issue of your journal, and I always find in its pages many useful hints. Now I wish to tell of a very interesting but extremely troublesome case of bronchial (?) asthma I just have had under care, the final outcome of which is so satisfactory that perhaps some of your readers, especially those in the smaller towns, may derive some benefit from my experience.

The patient, a woman of 37 years, had been in perfect health until one year ago, when she had a very difficult confinement. Since that time, she has had almost daily asthmatic attacks—coughing and extreme difficulty in breathing—so severe at times as to call for the most heroic measures to relieve the spasm.

Her urine was normal. There were no cardiac lesions. Her tonsils were removed and the turbinates cauterized six months ago. She has had practically all of the numerous drugs suggested for this condition, until finally, after drifting around for months, she came to me; but, despite the most careful examination, I was unable to discover the

cause of her trouble. However, "on general principles," I advised a course of "mixed-infection phylacogen." Beginning on November 19 last, I injected 1 mil, subcutaneously, of the bacterin, daily, until November 30, when I made it 2 mils; from November 21, 4 mils; then 5 mils until December 7. Thus, altogether, she received 87 mils of phylacogen between November 19 and December 7.

The reaction was not severe at any time, and consisted in headache, vomiting, chills, and, occasionally, profuse perspiration. The temperature after each dose went up to 100° to 102° F. There seemed to be no betterment until after the thirteenth injection. The woman's condition then began to improve, and after the final treatment she was quite well, except for an occasional cough, and since leaving the hospital she has been in perfect health; no sign of asthma has been evidenced and her cough has entirely disappeared.

I must admit frankly that this trial with phylacogen was wholly a "stab in the dark"; apparently, though, the "stab" went home, for, my patient is cured. The cause of her condition, no doubt, was a septic condition—but, where?

FRANK W. B. MCGILVERY.
Tillsonburg, Ontario, Canada.

CALCIUM SULPHIDE AS A PROPHYLACTIC OF DIPHTHERIA AND SMALLPOX

Of late, a great deal is being said about calcium sulphide as a prophylactic against bacterial disease. There is no doubt in my mind that this wonderful drug really possesses highly valuable virtues in this direction. As to the nature of the action by which the invading organisms are met and destroyed, I am unable to say. I do not know whether it is by stimulating phagocytosis and thereby increasing cell metamorphosis, or whether it is because of antiseptic properties imparted to the blood, thereby enhancing its germ-destroying properties and forming a medium that is detrimental to their existence.

This I do know, clinically, calcium sulphide is a wonderworker in septic conditions. I have used it in old tuberculosis-cases, in which the patient had chills and fever that were obstinate and unyielding to other remedies, but these readily disappeared after calcium sulphide given to saturation. An agent that has power to control a septic fever, like that of tuberculosis, where there almost always is present a mixed infection and the invading organisms are well fortified, undoubtedly also is capable to prevent the proliferation of invaders in a healthy soil.

Then, if calcium sulphide can take the offensive and destroy the enemy that is well fortified, why can it not act defensively, thus fortifying the body by preventing the noxious germs to establish themselves? On this line, I want to relate a few instances in which the sulphide undoubtedly acted as a true prophylactic of zymotic disease.

Case 1.—Four years ago, I was called to see a little girl, 4 years old, who was suffering from diphtheria. At my first visit, no membrane was visible, but, subsequently the characteristic dirty-gray membrane covered the tonsils, vault, and pharynx, and it left a raw bleeding surface when removed. Hence, undoubtedly my diagnosis was correct. Living in the same room with this child, was a 2-year-old baby, and this was kept saturated with calcium sulphide until all danger of infection was past. At no time did it exhibit the slightest symptoms of infection, not even a reddening of the mucous membrane of the throat.

Case 2.—One night I was called to see two patients down with scarlet-fever in the same family. There were three remaining children that had not yet taken it. I at once put the latter on calcium sulphide to saturation. In two days, one of them became sick with the disease; however, the other two escaped entirely, notwithstanding they lived in the same room with the three sick ones, and, owing to bad weather, were compelled to remain indoors most all of the time.

Case 3. Last summer, I was called to a case of smallpox. There were three in the family—the mother and two daughters, one of the latter being the one affected. None of them had ever been vaccinated, and they now refused vaccination.

I immediately gave calcium sulphide, to all three, to saturation. The well daughter never became ill, while the mother had but a very light attack—only three vesicles appearing on different parts of the body, scarcely any fever, no headache, backache, and no vomiting. The pocks that had formed dried up in a short time. In fact, she attended to her usual household duties while she was affected.

The case of the sick daughter was a typical one of the confluent type and manifested itself with great intensity. All three lived, ate, and slept in one small room.

I have in mind many other cases that I might mention, but will not take up any more

of your valuable space on this subject, for, no doubt, all close clinical observers will agree with me as to the merits of calcium sulphide.

J. W. NIEWEG.

Duncan, Okla.

CHARACTER AN ESSENTIAL FOR THE GOOD DOCTOR

The writer has just been reading an article contributed by Dr. J. W. Crenshaw, of Cadiz, Kentucky, to *The Kentucky Medical Journal* of January 1. Here is a talk with the young men which I wish could be brought to the attention of every young physician. Doctor Crenshaw says that "the most important essential in the making of a physician is character. First make the man, and then the doctor". He continues as follows:

"Very early in the professional life of the doctor, there were two books that lay on the very top of all other books on 'the pine-top table'. Other books were read, but these were studied; but these two did more for him than all others combined. It is unnecessary to call the name of the first, for you have probably anticipated me. If you want history, this book leads them all. If poetry is desired, there is none equal to be found. If biography, it contains the model for all ages. It is the Book of Books.

"You may be curious to know the second? It may cause some surprise when I call the title-page. The doctor did not appreciate it then as he does now, after having read, and re-read it over and over again. I can truly say, said the doctor, that after a near half-century of reading the best of books, from the world's best authors, that Ian Maclaren's 'Beside the Bonnie-Briar Bush' has done more for me than any book beside the Bible.

"Will you kindly bear with me, while we point out some of the strong points of this masterpiece of literature? There is no finer portraiture of high class Christian womanhood and motherhood, in all literature, than is portrayed in the character of Marget Howe as outlined by the graphic consecrated pen of Dr. John Watson under the nom-de-plume of Ian Maclaren. No finer picture was ever drawn, or one that has stamped itself more indelibly upon human thought than that of Weelum Maclure, the 'doctor of the old school'. If an ideal picture of a school teacher is wanted, where would you look to find a better than that of Patrick Jaimeson, the 'Loved Domsie'?

"The doctor now standing near the middle of the third quarter of the time allotted to life's activities, in the greatest of all professions, and looking back over the road traveled, the two men, the rich man with his quiet advice, and the punctilious lawyer with his never-to-be-forgotten example; the two books, the Bible, and 'Beside the Bonnie-Briar Bush,' have had an overpowering influence overshadowing all else. He puts nothing on a par with their influence with the striking exception of the ever present and ever helpful influence of the happy mother of eight children, who was the wise counselor, and the constant comforter of the sun-shiniest home that the most exacting optimist could conceive of or demand, the power of which will be felt on down the ages and through the cycles of eternity."

HEALTH INSURANCE BILLS—LOOK OUT FOR THEM

Last month we advised the readers of CLINICAL MEDICINE that there is being introduced into our state legislatures a socalled "Model Health Insurance Bill." This is now pending in many states. It provides free health insurance and sick benefit, maternity service, hospital service, and funeral benefits for every head of a family and those depending upon him receiving $100.00 a month or less.

This bill seems to be a serious menace to the medical profession. It should be studied with exceeding care from the standpoint of the physician as well as that of the public before it is allowed to become a law. We urge every reader of CLINICAL MEDICINE to write to his representatives in the state legislature, asking to be fully advised of the progress of bills of this kind. They should not be allowed to pass until they have been carefully digested.

LINSEED OIL USEFUL FOR CHILBLAINS

In answer to your inquiry in the February number of CLINICAL MEDICINE regarding the treatment for chilblains, I take leave to submit the following, which I have never known to fail:

For three successive nights apply a coating of linseed oil, letting the oil dry in, and then putting on a pair of stockings to protect the bedding. On the fourth night bathe the feet in hot water. Thereafter there will be no more trouble with the chilblains.

J. B. ANDERSON.

Trenton, Ark.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

[*Concluded from February issue, page 161.*]

HYPNOTISM in Suggestion.—Concerning the first of these ways—that is, hypnotism—I believe that many of its marvels, apparent and real, can be accounted for rationally only upon the assumption that the conscious is not so soundly asleep as it appears to be, and that the suggestion which seems to fall directly upon the unconscious really trickles through some semblance of a remaining consciousness. In short, consciousness under the influence of hypnotism is not asleep, it is ailing. Call it warped, dulled, weakened or wandering, on the one side, or, simulative, alert, mercenary, on the other—or, call it what you will—I firmly believe, from the numerous experiments that have come under my observation, that the suggestion in the hypnotic state is as truly indirect, passing through the conscious first, as it is in the most typically normal conditions.

I would go further. I believe it will be found, in due season, when the time is ripe for a sane examination of this age-old question in a new form, that the suggestion given to a person under the influence of hypnotism does not reach the subconscious mind at all during the treatment and that only afterward, when the balance of loss and gain has been weighed by the subject, does it enter the subconscious, there to remain fixed as a determining influence upon the subject's future view of the matter. Consciousness, abnormal consciousness, a consciousness which is either above or below the normal and that only, will explain the marvels, real and pseudo-real, that I have seen and which were attributed to hypnotism.

But, hypnotism, which no writer of authority today would recommend for application in general practice, may be left out of the question here. There is a second, socalled "direct" method, and that is the influence which the personality of the physician has upon the patient's subconscious mind. This is called a "direct" influence, because it is supposed to fall immediately upon the patient's subconscious mind, he being conscious that it is doing so.

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Influence of the Physician's Personality.—But here, too, as in hypnotism, I believe it will be found that the influence is not direct, but that what the physician appears to be to the patient is what appeals first to the patient's conscious mind, and that only after he has revised and corrected his first impressions as they were made on his conscious mind do they sink to the level of the subconscious. In short, as I interpret my experience, the subconscious mind is never to be reached in any way except through the conscious, which latter first receives the impressions, weighs them, submits them to the subconscious, which rejects them if they do not fall in line with the trend of its general contents and sends them back to the conscious for additional revision and correction, immutably refusing to accept them until they conform to the standards already set up by itself.

If I mention these things here, it is merely for the purpose of preparing the way for what is to come later. The influence of the physician's mentality is of sufficient importance to demand a chapter by itself, which I shall presently devote to it; but, I believe that the phenomena worked by it upon the patient's body can never be explained on any hypothesis that does not recognize the conscious mind as the medium of its action upon the subconscious. If this is true, it should be made plain at this juncture.

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Similarity Between Hypnotism and Hysteria.—Probably all practitioners who have had more than the merest passing acquaintance with hypnotism—which latter is supposed to put the conscious part of the mind asleep—must have noticed what Doctor Schofield, in his "Unconscious Therapeutics" (page 33) refers to in these words: "In hypnotic as in hysterical subjects, the range of perceptible sensations is much increased, so that in both states feelings, signals, and faint

impressions are perceived that otherwise do not enter consciousness; showing in hysteria and hypnotism analogous conditions, which is in both the bringing of the unconscious [subconscious] region of the mind temporarily into consciousness. As a rule, therefore, for therapeutical purposes, suggestions without hypnotism not only are more useful and more easily applied, but are much more likely to be employed generally by the profession, which still, rightly or wrongly, looks askance upon hypnotism." Which is to say, suggestions to the conscious mind are preferable to those addressed to the subconscious (unconscious).

Though this author does not say that the appeal to the conscious is the *only* way, but merely holds that it is the better, it would appear to a perspicacious mind that in the above statement he has taken a long step toward admitting that, at least *probably*, it is the only way. And, so far as I know, all reputable writers on the subject hold similar views. They all of them admit that, as a rule, better results are obtained through suggestion to a conscious than to an unconscious subject. It is certain that when the conscious is asleep through a physical cause, such as a blow on the head, the subconscious can receive no impressions telepathically, and, if the conditions are different in cases of mental cause, the reason has not yet been shown, and, in fact, such a supposition is directly against every reason and analogy.

Probably the difficulty here lies in our inability to understand how the normal wide-awake mind can produce such effects as we have seen worked on the body. But, much of this difficulty vanishes if we remember that the conscious is not a fixed state, that it is fluid, running now above and now below normal, sometimes taking its color from the subconscious and sometimes from the superconscious—that the very fact that a subject receives a mental suggestion is proof positive that the subject's conscious is awake, even though it be in an abnormal condition.

The subconscious will not accept any message from the conscious or from any other source which does not "train in its own camp." A truly honest man, one who loves uprightness for its own sake, could never be made to steal by any suggestion that he do so. The limitations of the mental are as strictly defined in their way as those of the physical in their way; indeed, the one is the symbol, the outer semblance, of the other.

Herein lies the secret of the power of suggestion. A mind that is filled with harmonious thoughts produces a body that is harmonious, and the more the patient has habituated himself to think beautiful thoughts, to occupy his mind with elevating, pleasant, generous thoughts, the more susceptible will he be to any suggestion of like nature that may be given him. Both his conscious and subconscious mind will readily receive and assimilate such suggestions, however new in form they may be, as the body of the practiced athlete receives and acts upon such suggestions as may be given it tending to increase the physical strength. Whatever the trend of the training of the subconscious mind, that indicates the impressions that will be most readily received and assimilated, most readily believed and acted upon.

It is to be noted that falsehood as well as truth is accepted by the subconscious through the conscious, which accounts for the great variety of opinion about all things under the sun. We believe what we wish to believe, for the reason that our mind has long been set in that direction, right or wrong in the abstract. The beauty of psychotherapy is, that the operator is not called upon to fill his patient's whole mind with beautiful ideas, with absolute truth or with anything but confidence; for, it is a feeling of confidence, of safety, of comfort in the patient's mind that heals him. It does not matter greatly what the confidence is fixed upon, it only is necessary, or chiefly so, that the feeling be there, in the mind of the patient. And it is the work of the practitioner to put it there by whatever means he may have with the greatest facility.

All this is only the old, old story—faith made plain by a modern version. The new confidence is the old faith, and it still will move mountains, just as truly as it ever would, and in the same way. Any person who can educate his subconscious mind to believe that he can move a mountain, can move a mountain. And that is all that was originally claimed for faith. The conclusion is obvious: whoever wishes to secure and retain good health may do so, so far as he may through psychotherapy, by filling his mind with confidence.

And this he can best do—in fact, can only do—by acting in the world the part of a true man or woman. The consciousness that we are doing the best that is in us will form so solid a rock for us to stand upon that nothing but a cosmic law itself can disturb our equilibrium, infusing us with a confidence of which that of the ignorantly confident, the confidence that is so often seen in the ignorant,

is merely the gross shadow intended for the animals. Psychotherapy always leads around as the last, by whatever route we travel it, to sweetness and light, all manly and womanly virtues.

Modes of Suggestion.—A list of the psychical influences that may be brought to bear therapeutically upon a patient would be a long one, including drugs (without virtues in themselves), isolation, baths, special feeding, minor operations, climates, surroundings, dietaries, shocks, either mental or physical, pleasures, pains, special occupations, emotional stimuli, commands, influences—religious or ethical—travel, study, gymnastics, dress, sexual influences, ambitions, social rewards or losses, anything that, by studying the conscious mind, giving it hope, distracting its attention from the disease, will inspire the subconscious with confidence. A patient upon whom a long course of drugs has had no apparent effect may be healed by the sight of new buds on the trees in the spring, by seeing a runaway horse smashing a wagon, by an increase or decrease in salary or by any one of a possible thousand little things that have no obvious connection either with him or disease. In these cases, it is the *vis medicatrix naturæ* that performs the cure, the obstruction to its action having been removed by that little thing.

This is the secret of a thousand and one miraculous cures. Something, no matter what and no matter whether or not the patient be aware of the influence, has occupied the conscious mind and kept it busy with new or interesting things, giving nature an opportunity to resume its normal functions, which it cannot do while the mind, and consequently the physiological balance, is disturbed by suffering.

Psychic Action of Drugs.—It was out of an understanding of this principle by physicians that placebos, in their true, legitimate aspects, doubtless sprang. When as long ago as in 1771 Unzer wrote, "the expectation of the action of a remedy often causes us to experience its operation beforehand," he had taken a first step toward the knowledge that now is ours, namely, that even an appearance of giving a remedy when none is given will, in certain cases, produce greater effects than any known material remedy could accomplish. Thus, all drugs have or may have, according to circumstances, a twofold value—a physical and a mental one. The physical, addressing itself solely to the body, works its natural results physiologically, in which it is aided by the expectation of the mind. The two work together, the one complementing the other, and should never be considered antagonistic. The remedy itself, even in its grossest form, is, in the last analysis, concentrated mind, the intelligence of the physician precipitated in the form of a pill or an essence.

How to Learn Psychotherapy.—While it is true that much of psychotherapeutical value may be gleaned from books and lectures, those books and lectures may be on every subject under the sun; for, broad culture is the secret of it, a culture that has examined and probed to the bottom all the tenets both of the humanities and the religions of the world; and it is probable that direct psychotherapeutical teaching will, as a rule, prove of little avail. Plato, for example, is crammed from cover to cover with the strictest up to date mental healing, though he never heard of such a thing. So are Spinoza, Goethe, Auerbach, Emerson, Hinton, Shakespeare, Montaigne, Alice Broan, Walt Whitman, and a thousand other classics. There is even some mental-healing truth in many of the modern books on the subject. Their value is somewhat lowered, however, by the fact that all they say has been said before, and in incalculably better ways, by the great writers of the ages.

Psychotherapy is not a series of formulas that can be taught, it is a philosophy; and it never will be learned beyond the degree in which its principles are lived by the learner.

[*To be continued.*]

MY NEIGHBOR'S ROSES

The roses red upon my neighbor's vine
Are owned by him, but they are also mine.
His was the cost, and his the labor, too,
But mine as well as his the joy, their loveliness to view.

They bloom for me, and are for me as fair
As for the man who gives them all his care.

Thus I am rich, because a good man grew
A rose-clad vine for all his neighbor's view.

I know from this that others plant for me,
And what they own, my joy may also be;
So why be selfish, when so much that's fine
Is grown for you, upon your neighbor's vine?

—A. Gruber.

Among the Books

KOBER AND HANSON: "OCCUPATIONAL AND VOCATIONAL HYGIENE"

Diseases of Occupation, and Vocational Hygiene. Edited by George M. Kober, M. D., and William C. Hanson, M. D. With Illustrations and Reference-Tables. Philadelphia: P. Blakiston's Son & Co. 1916. Price $8.00.

Health is the chief asset of the workingman, and no greater calamity can befall him than when his earning-capacity is impaired or arrested by reasons of sickness or disability. It means, in many instances, the utter financial ruin of the family and, doubtless, is one of the most potent causes of poverty and distress.

Many of the diseases are incident to occupation and environments, and industrial efficiency and earning-power can be promoted by appropriate safeguards and adequate protection of the men, women, and children engaged in gainful occupations.

In the search for the causes and prevention of diseases, the interests of the wage-earners have not been neglected; indeed, it may be truly said that a special department of social medicine has been created, with a most complete and satisfactory literature relating to the hygiene of occupations and the prevention of occupational diseases and accidents.

In 1897, German authors issued a volume of over 1200 pages, and English authors, under the editorship of Sir Thomas Oliver, devoted 891 pages to a monograph on dangerous trades, the historical, social, and legal aspects of industrial occupations as affecting health. The latest important contribution to the literature on diseases of occupation and on vocational hygiene is the volume before us, which is the collective work of 25 American and 4 European writers on the subject. The senior editor was president of the section on hygiene of occupations at the 154th International Congress on Hygiene and Demography held in Washington in May, 1912, and it is fitting that this American textbook should result from the impetus of that Congress held in our country.

That the United States were not backward in realizing the importance of the subject early, appears from the fact that legislation concerning child-labor received attention in Massachusetts as far back as in 1836. Massachusetts was also the first state to enact a law (in 1852) as regards the safety of steam-machines and by an Act of 1870 it required supervision of steam-boilers; but it was not until 1877 that this state enacted a law setting forth certain requirements for the removal of dust. Since then, the Department of Labor of the federal government has caused many inquiries to be made on questions of industrial and vocational hygiene, the results of which are laid down in numerous bulletins published by that department. Various committees and councils having national scope of activity have lent encouragement to related studies, and under the impetus of the International Congress referred to enough material was published to justify the issue of an American textbook on the subject. It is presented in three parts, as follows:

Part I deals with the specific and systemic diseases of occupation. It also treats of fatigue and the neuroses. The various chapters are written by specialists of international reputation and are adapted to the needs of medical and legal experts, medical examiners, insurance examiners, practicing physicians, teachers, students, and others desiring accurate scientific information relating to the pathology, symptomatology, and treatment of diseases of occupation.

Part II deals with the causation and prevention of occupational diseases and accidents. While it is also of interest to physicians, lawyers, and efficiency-experts, it should chiefly interest the employers, employees, public-health officers, nurses, social workers, legislators, and others actively interested in the prevention of avoidable occupational hazards. This part of the book also contains a list of industrial poisons and of industries and processes in which poisoning may occur, and, further, tables of occupational mortality and morbidity statistics, arranged in alphabetical order for convenient reference.

Part III is intended to be of service to those who may be called upon to investigate in the shop, the factory, in the dispensary and hospital the relations of occupation to disa-

bility and disease. This portion has been framed, too, in the hope that it may stimulate the teachers of the coming generation of physicians to impart to their pupils a better knowledge of occupational diseases and their prevention, which, after all, is of more economic importance than their cure.

As will be seen, the scope of this work is wide and of far-reaching import. The subject should, certainly, be studied by physicians first of all, and should not be left entirely to social workers, legislators, and employers.

GRAHAM: "DISEASES OF CHILDREN"

Diseases of Children. By Edwin E. Graham, A. B., M. D. Illustrated with 89 engravings and 4 plates. Philadelphia: Lea & Febiger. 1916.

Doctor Graham has produced a very readable and useful treatise on the important subject of diseases of children and has presented discussions on several special objects that tend to increase the value of his textbook. Among these, may be mentioned, especially, the chapters on infant mortality, heredity and environment, puberty, and fresh air. In accordance with the well-known fact that pathological phenomena can not be understood and appreciated unless the physiology is mastered first, the author has considered the subject of normal digestion in a special chapter, which should make it easier to study the various disturbances and diseases of the gastrointestinal tract.

To the discussion of infectious diseases as they affect children, a total of only 130 pages has been allotted. Nevertheless, sufficient information is given to aid the physician in the treatment of his young patients affected by these maladies. It is a cause for congratulation that the author evidently believes in the merits of properly selected drugs, even in pneumonia, which has been claimed not to be influenced by drug-treatment. Valuable hints and suggestions are presented, by means of which the little patients can be carried back to health, more certainly and easily than by expectant treatment.

Under the prophylaxis of diphtheria, reference is made to the Schick reaction, by means of which it can be determined whether certain persons require prophylactic immunization by injecting antitoxin, or not. We should have liked to see this subject discussed in a little greater detail, because we are convinced that it is of very great importance and that the general practitioner should have on hand for ready reference exact directions for carrying out this very simple but instructive test.

If the author is of the opinion that the administration of salvarsan should be carried out only by one thoroughly conversant with the technic, we believe it would be only fair to impose the same conditions in the specific treatment of tuberculosis, no matter whether old tuberculin or one of the bacillary products of the tubercle-bacillus be employed. We do not mean to suggest that tuberculin-treatment should be administered only by specialists, but we do maintain that the use of this powerful class of remedies should be studied in a special course. All in all, the Reviewer was much pleased with his study of this book and recommends it most cordially.

"PRACTICAL MEDICINE SERIES"

The Practical Medicine Series: Comprising ten volumes on the year's progress in medicine and surgery. Under the general editorial charge of Charles L. Mix, A. M., M. D. Chicago: The Year-Book Publishers. Price, $10.00 for the series of ten volumes; single volumes usually cost $1.35 or $1.50.

Of this excellent series of review volumes, we still have to acknowledge the series of 1915, volumes 6 to 10, inclusive. Of the series of 1916, we have received all twelve volumes. The work is intended to cover the entire field of medicine and surgery, including the specialties. While these collations are intended primarily to furnish to the general practitioner information on the most recent discoveries and acquirements, the arrangement of the matter in special volumes for the several subjects makes it possible to obtain reviews on those in which a physician may be particularly interested. The reviews are done with care, and the information is sufficiently detailed to be of service.

"THE LINK"

A few months ago, we received a copy of *The Link*—this being a small journal that constitutes "a link" between the members of the Association for the Study of Internal Secretions, published, monthly, by this association, under the editorship of Dr. Henry R. Harrower, at 1107 West 7th Street, Glendale, Los Angeles, California. The object of this monthly is, to serve the purposes of the association for the study of the internal secretions, by presenting references to the current literature on the subject, including

authors' abstracts of communications which may be published elsewhere, translated reviews of the foreign literature, original clinical reports, short résumés, and, in general, a concise and practical survey of the progress in endocrinology.

The study of the internal secretions and of their importance for the normal functioning of the organism and their availability and usefulness in diseases due either wholly or in part to anomalies of the internal secretions has come to occupy a very important position, and the subject bids fair to rival in importance the vaccine- or bacterin-therapy of infectious diseases. Certain it is that a better understanding of this chapter of medical lore, which still is largely *terra incognita*, is most timely, and that the association formed for the purpose of securing it deserves the support of physicians everywhere. We wish to *The Link* much success and hope that its purpose and aims will eventually come to a splendid fruition.

"AUTOMOBILIST'S EXPENSE ACCOUNT"

Automobilist's Pocket Companion and Expense Account. A Practical Expense Record and Handbook of Helpful Data. Arranged by Victor W. Pagé. New York: The W. Henley Publishing Company. 1916. Price $1.00.

This handy little book provides space for all kinds of records of interest in connection with the owning and working of a car,—a useful point, if it is to be determined just how great the expenses incidental to this mode of transportation are. There also are chapters on pointers for car-owners, road troubles, hints on driving both in winter and at other times; in short, the book wants to be a pocket-companion and a faithful guide and mentor.

GILLIAM: "GYNECOLOGY"

A Textbook of Practical Gynecology for Practitioners and Students. By D. Tod Gilliam, M. D., and Earl M. Gilliam, M. D. Fifth revised edition. Illustrated with 352 engravings, a colored frontispiece, and 13 full-page half-tone plates. Philadelphia: The F. A. Davis Company. 1916. Price $5.00.

Doctor Gilliam's "Textbook on Gynecology" aims to present the subject to students and practitioners in as practical and concise a manner as possible, unencumbered by useless theoretical discussion. The subject-matter is divided into fifty-two chapters, the various topics being discussed, in a clear and lucid manner, from the standpoints of causation, symptoms, diagnosis, and treatment, the surgical procedures for the relief of gynecological diseases receiving prominent attention.

The book contains a brief but useful discussion of constipation, in which the author calls attention to the important fact that no doubt the prevailing construction of the closet-seat is partly responsible for some of the cases of constipation, inasmuch as it interferes with the natural position most appropriate for defecation, which, naturally, is the squatting posture. Since constipation is so frequent a symptom in women requiring the services of the gynecologist, this chapter is very acceptable.

Gilliam's "Gynecology" may be recommended as a valuable guide for the treatment of diseases peculiar to women.

"THE MOTHERS' BOOK"

"The Mothers' Book" is a little pamphlet of 32 pages published by the South Dakota State Board of Health (Waubay, South Dakota), in its endeavor to reduce the toll of preventable infant deaths, and to promote and maintain a sturdy citizenship by calling attention to the needs met and the needs not met for the welfare of the child. The text deals with the general care and hygiene of babies and children. It is held brief and concise and is certain to accomplish much in the hands of those mothers who want this help.

Unfortunately, it must be admitted with reference to all publications of this kind that intelligent mothers will take the initiative on their own account and will seek information for their guidance; but there are many women who either do not care or who think that the old slipshod ways are good enough, or else are too apathetic to take the trouble of learning new ways, however superior they may be to the old.

It is for this reason that the newer conception of the physician's duty, namely, that of preventing disease, needs constantly to be kept in mind, and it is up to the physician to keep everlastingly after the mothers among his clientele, in an endeavor to educate and train them. Physicians should call the attention of their mother-clients to publications like the one under consideration (several state boards have published such), and to make sure that these pamphlets not alone are read, but also their instructions followed.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters

Queries

QUERY 6287.—"Cystitis." J. W. F., Texas sent a specimen of urine from a man aged twenty-eight, married, and father of three children. This man never had any venereal disease, has been strictly temperate all of his life, and has always enjoyed the best of health, until about one year ago, when he discovered the presence of blood in his urine. Occasional backache is the only thing he complained of. He never had any fever, his bowels are regular, and his appetite is fairly good all the time. His family history is good. His father and mother are living and both strong and healthy. There is no trace of any heriditary taint or disease in the grandparents on either side.

Our correspondent has been treating this patient for about three months and now is giving him lithium-benzoate tablets, 15 to 20 grains a day; urotropin, 5 grains night and morning; ferrosodylate pills, three times a day after meals; a laxative when required. At times, his urine contains much less blood, although it never is entirely absent.

The sample of urine submitted by our correspondent shows a definite alkaline reaction, notwithstanding the fact that he added boric acid, as a preservative. There is present 1-5 percent of albumin, but no casts were found, thus suggesting that probably there is no renal trouble, at least not of a nephritic nature. As to whether a calculus is present, we are unable to say. If there is, it may be a phosphatic concretion—in which case the urine possibly would be alkaline in reaction. The presence of red blood-corpuscles together with pus and much squamous epithelium, as also the numerous colon-bacilli, staphylococci, and streptococci, would lead us to infer that there may be a cystitis.

We doubt that there is tuberculosis of the kidneys, but think, rather, that the trouble is located in the bladder. The urea content of the urine is very low, but the total solids are fairly good. This also argues against any severe renal lesion.

Our suggestion is, that you discontinue the lithium benzoate, because that tends to render the urine alkaline, while, if the urine is alkaline, urotropin is of absolutely no value (as it calls for an acid medium). We suggest that you give this man hexamethylenamine in association with acid sodium phosphate, which will render the urine normally acid—under which conditions alone the urotropin, or hexamethylenamine, will become effective. Arbutin in 1-2-grain doses, three times daily, also may be administered with advantage. Of course, the ideal treatment for this patient would be an autogenous bacterin, and this we strongly urge.

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QUERY 6288.—"Calling Upon One's Competitor." K., Illinois, writes: "Should a physician upon locating in a town call upon the physicians already established there or should the latter first visit the new arrival?"

It is generally understood that the new physician in a place should make the initial call upon his professional brethren. Those who desire to be friendly return this call, while those who regard him either as an interloper or a dangerous competitor stay away from him. Among oldtime physicians in certain parts of the country, the reverse is the practice: The young doctor hardly is settled, when the established physician (or physicians) in the place drops in to extend a welcome. However, as a rule, it would be wiser for the newly located doctor to call upon his local confrères within a reasonable time.

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QUERY 6289.—"Hyperthyroidism." J. J. B., North Carolina, has under observation a young woman, sixteen years of age, married five months ago. "She was taken sick about seven weeks ago, the onset being gradual,

with a sensation of choking, rapid heart, and irregular fever. She was treated for five weeks by another physician, who said her pulse had been as high as 160 and temperature, 104° F. For the last two weeks, her pulse has been about 107 most of the time and the temperature 99° F.; but, about every seven to ten days she has what might be called 'a nervous chill'. She jerks very badly in these spells and sometimes feels as though she were about to die. After receiving quinine hydrobromate for about a week, her pulse is not as fast, except during the 'nervous spells', at which time it is about 120."

Our correspondent believes that there is a slight enlargement of the thyroid gland, but another physician called in consultation does not think so. The day after she was taken sick, the menses came on and lasted about one week; since then they have not appeared again. There is no evidence of an abortion. "The patient's appetite is not very good, but she is not emaciated, looks about as well as she did before she got sick. The urine is normal. Respiration also is normal, except during the nervous attacks; then she feels as if she were smothering. There is some enlargement of the right ovary and slight congestion of the fallopian tube on the same side, but no pain and only very little tenderness. She is very easily excited and there are slight tremors, but there is no protrusion of the eyes. Her bowels are moved daily by means of purgatives. For the last week, she sweats considerably. Blood examination shows no malaria-parasites. She does not get cold when she has these nervous spells, of which she may have three or four in one day, but then not any more for a week or ten days. Do you think she could have exophthalmic goiter? What could that fever be due to? There is no enlargement of the heart—sound is normal. There is some precordial pain, though, at times."

Unfortunately, the data presented are insufficient to enable us to venture a diagnosis; however, the symptoms seem to point to the existence of some disturbance of the thyroid gland. As you are aware, protrusion of the eyes is not necessarily present in exophthalmos. On the other hand, we should not expect to find in that condition a temperature ranging between 90° to 104° F., and neither should we expect "cold moist sweats."

Do not overlook the fact that these symptoms are appearing in a young woman five months married. The possibility of pregnancy (normal or extrauterine) must not be lost sight of. We should be inclined to have an Abderhalden test made. Then, also, this may be a case of incomplete abortion. Absorption of septic material would, of course, account for most of the symptoms described. You do not give us any information relative to the condition of the pelvic viscera, nor state whether there is any vaginal discharge. It is well to bear in mind, also, that, if this woman is pregnant, more or less enlargement of the thyroid gland is quite likely to be present.

Ascertain the condition of the husband. Look closely into his former history. Also, gently but firmly probe the sexual life of this couple since they have been married: much of the trouble may be due to excess.

If pregnancy and abortion, or other infection of the pelvic viscera, can be definitely excluded, you still have to think of the possibility of malaria, the presence of intestinal parasites, and hysteria. Is the young woman a native of North Carolina? What is her history and occupation before marriage? If she has recently come from one of the southern states, malaria must be seriously thought of, and can be excluded only if frequent blood examinations prove negative. The fact that the pulse rate has declined under quinine hydrobromide is rather suggestive.

We cannot refrain from again calling your attention to the pelvis. You state that there is "some enlargement of the right ovary and slight congestion of the tube on the right side, but no distinct pain, only a slight tenderness" (we assume, upon pressure). Frankly, we are inclined to believe that it is in this neighborhood that you will find the origin of the entire trouble.

If you will send us 4 ounces of the young woman's urine (taken from the combined 24-hour output, stating the total quantity voided) and a specimen of her blood and at the same time a specimen of the husband's urine (taken by the 3-glass method the first thing upon rising in the morning), we may be in a better position to aid you. If there is any reason to suspect gonorrhea in the husband, secure also a specimen of the prostatic discharge.

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QUERY 6290.—"Hepatic Insufficiency and Intestinal Indigestion." F. D. P., Michigan, makes inquiry as to the best manner of treating a woman, aged sixty, who for some time has been in a very bilious condition, the tongue being thickly coated, the bowels sluggish, with proneness to gas accumulation in the intestine. Four times a day, this patient has been given three granules of

chionanthoid, gr. 1-2, and of leptandroid, gr. 1-2. With these the doctor has alternated bryonin, gr. 1-64, and juglandoid, gr. 1-2, although depending most on the bryonin to control the flatulence. Most of the time, the patient has also taken the combined sulphocarbolates between meals. Sometimes he has varied this treatment by the use of the following: Fluid extract of hydrastis, dr. 1; specific medicine of eupatorium, dr. 1; glycerin, dr. 2; peppermint water, enough to make ozs. 2. Label: Shake well and give a teaspoonful half an hour before eating. The bowels now act fairly well, the tongue is clear, and the patient does not now have to resort to light diet to avoid distress, but at times—especially in the morning—is still troubled with gas.

Though the picture is not very clear, we are inclined to believe that hepatic torpor and the accompanying intestinal indigestion may be regarded as the basal pathologic condition. It would be well to have the woman's urine examined, when, with the knowledge so obtained, we shall be in a better position to give advice.

Meantime, we would advise small doses of blue mass and soda (gr. 1-2), with podophyllin (gr. 1-6), every half hour for four to six doses, every third night for two weeks, with a laxative saline the next morning. Before each meal, papain (papayotin), gr. 1-6; strychnine arsenate, gr. 1-128; oleoresin of capsicum, gr. 1-64; emetoid, gr. 1-128. One hour after food, bilein, gr. 1-8; strychnine arsenate, gr. 1-128; pancreatin, gr. 1; sodium sulphocarbolate, grs. 2 1-2; sodium carbonate, grs. 2 1-2.

The diet must, of course, be carefully regulated and the patient instructed to masticate her food thoroughly. Is there any gastroptosis? Are the stools acholic?

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QUERY 6291.—"Dosage of Lobeline." J. A. H., Kentucky, writes: "I am anxious to try lobeline sulphate hypodermically in laryngeal and bronchial spasm of various origin, but find that some authorities recommend that lobeline be given in doses varying from 1-50 to 1 grain, while you recommend doses of 1-200 grain. I would appreciate very much if you would inform me whether 1-200 grain is a maximum adult dose, and how this dose compares with 30 minims of the tincture."

The present writer would hesitate a long time before giving more than gr. 1-100 of lobeline sulphate. It must be borne in mind that the lobeline heretofore on the market was not a very satisfactory product; however, lobeline sulphate (Abbott) is a definite, physiologically tested product and extremely active. Veterinarians, who use this drug largely in tetanus, rarely exceed 1-20 of a grain, and this writer, who has been experimenting somewhat extensively with it, secures marked relaxation within fifteen minutes from 1-200 grain.

We would suggest giving such a dose, repeating it if the desired result is not secured in thirty minutes; or, you might enhance and maintain the effect by the internal administration of 1-64 grain swallowed with hot water. Be sure that your patient does not chew the granules or even hold them in his mouth; a very distressing tingling of the fauces and buccal mucosa will result if he does.

In asthma and spasmodic conditions, the lobeline should be pushed till thorough relaxation or else emesis and diaphoresis is produced.

It is practically impossible, as you can readily understand, to compare lobeline and a given quantity of the tincture of lobelia, for, the alkaloidal content of the crude drug and galenicals always is problematical.

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QUERY 6292.—"Enuresis Diurna." S. S. T., Tennessee, is treating a young girl twenty-three years of age who at times is unable to control her urine. There is no trouble at night, and not every day; it "just occurs in spells"; for instance, if she rides in a buggy, the urine will be discharged involuntarily, and sometimes there is slight burning. She has had no venereal disease.

Enuresis diurna is a very peculiar condition, sometimes yielding quite readily to very simple measures, and, again, proving rebellious to almost every kind of treatment. In this case, it is possible that very marked improvement will follow the administration of hyoscyamine and strychnine valerate in rather large doses. Thuja also may be used with advantage.

As you will readily understand, it is most desirable to discover any possible causative abnormality. Occasionally the whole trouble will disappear if a hooded clitoris is released. Spinal faradization or the cold spinal douche frequently proves beneficial. In markedly nervous females, scutellaroid, viburnoid, and the valerates are indicated.

Recently, excellent results have been reported from the use of pituitary solution, 1-4 mil (Cc.) being injected intramuscularly every third day. Frequently marked relief follows the first dose, while a complete cure

has resulted after the administration of 1 mil.

It would be well in this case to ascertain the condition of the pelvic viscera and find out positively if the bowels are evacuated regularly and thoroughly. The patient's urine must, of course, also be examined.

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QUERY 6293.—"Persistent Diarrhea." W. S. Y., Nebraska, asks therapeutic suggestions in the case of a man, fifty-one years old—family history good, mother living, father died in old age, three sisters alive, three brothers died in infancy, one brother alive. "The patient has suffered each year three to four attacks of diarrhea during the past seven years. During these periods, the bowels would move from ten to fifteen times per day; for the past seven weeks, he has had from fifteen to twenty movements per day. No solids seem to pass, but just liquid. He has no trouble in passing water; complains of having some pain in the stomach just before the bowels move; up to the past week has been able to eat anything. He has received emetine, 1-2 grain every second day for four days, then every day for the past four days; and in that time he has improved a little. He has received no other medicine whatever. The patient is anemic and has lost weight, from 190 to now 147 pounds. The pulse is 70, the temperature is 98.5° F."

Unfortunately, the laboratory report on the specimen of feces from your patient does not prove particularly informative. There are present in it much mucus, a few pus-cells, and a few Gram-staining bacilli. No tubercle-bacilli could be identified. Would it not be well, however, to have a tuberculin test made? This patient's blood and urine should also be examined.

Without knowing a great deal more about general conditions, it is difficult for us to venture definite diagnostic or therapeutic suggestions. It is possible, of course, considering the large quantity of fat present, that good results might follow the administration of bilein, gr. 1-8; strychnine arsenate, gr. 1-128; pancreatin, gr. 1; sodium sulphocarbolate, grs. 2 1-2; sodium carbonate, grs. 2 1-2, and minute doses of copper arsenite. In addition, we should be inclined to give small doses of berberine and strychnine.

The patient should, of course, be dieted very carefully, and wear a flannel abdominal band. Burnt-flour gruel might be given in comparatively large quantities for a few days.

You do not state that there is any pain in the abdomen, nor do you give us any idea of the patient's prior clinical history. What is his occupation? In this connection, let us call your attention to our answer to query No. 6284, in the last (February) issue of CLINICAL MEDICINE.

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QUERY 6294.—"Pulmonary Phthisis." C F., P. Q., Canada, sent specimen of sputum from a woman about twenty-seven years old, asking whether it contained tubercle-bacilli. This patient began coughing about a year ago, when in her second pregnancy. After her confinement on August 11, she began to lose flesh, and in December she coughed blood on two occasions. She is now much emaciated, has chills, a temperature as high as 103 degrees or more, and night sweats. She has had an attack of mucomembranous enterocolitis; but this was relieved by the use of the combined sulphocarbolates.

The report on the sputum examination indicates open tuberculosis, with associated infection with various microorganisms.

The history of your patient causes us to fear that the prognosis is exceedingly grave. Tuberculosis, when it becomes active during pregnancy and (as it seems) makes decided progress after confinement, always is a very serious disease, and one that very often is rapidly fatal.

The fact that your patient is emaciated, has chills and night sweats, and that her temperature goes above 103° F. indicates a rapidly progressive destruction of tissue and waste of strength. The attack of mucomembranous enterocolitis of which you speak causes us to fear that the tuberculous process has involved the intestine—that, in fact, there exists a tuberculous enteritis. If true, this would make the outlook almost hopeless. However, since you say that you have succeeded in subduing the intestinal trouble by means of intestinal antiseptics, it may be possible to hold this process in check and you may, perhaps, succeed in arresting the pulmonary destruction and somewhat to postpone the fatal termination. Above all, a continuation of the intestinal antiseptic treatment is indicated, and large doses should be given as long as the digestion is not affected by the remedy. By large doses, we mean 24-hour amounts of about 1 dram of the sulphocarbolates, or even more.

We believe that the emaciation, chills and night sweats, fever, and other symptoms of intoxication are owing far more to the associated infection than to the tubercle-bacilli and, therefore, suggest the administration of a bacterin corresponding in its com-

position to the complicating bacteria. A very serviceable stock bacterin for this purpose is available, and this contains suitable amounts of micrococcus catarrhalis, bacillus Friedlander, pneumococcus, streptococcus, and staphylococcus albus and aureus. During the reaction from a dose of this bacterin, there may be present fever, headache, malaise, increased expectoration, and, we anticipate swelling, redness, and soreness of the arm.

In cases of a reaction occurring, wait for its subsidence, then repeat the dose of bacterin, giving the same amount, if the reaction has been severe, or increasing it, if it was mild. The second dose should be given in the other arm. The bacterin should be administered in increasing doses (alternating from side to side), taking the precaution not to increase the dose whenever the reaction is severe. In this way, we may hope to immunize the patient against the complicating associated infection and thereby to arrest the destructive process.

If you succeed in this, and if, also, it is possible to reduce the fever, to arrest the emaciation and to eliminate the chills and night sweats, then it will be proper to attempt the specific immunization of the patient against the tubercle-bacillus by means of a suitable tuberculin or other tubercle-bacillus preparation.

It goes without saying that you must resort to all measures with respect to the general treatment of your patient as they are outlined in current literature regarding the diabetic, climatic, and open-air treatment of tuberculosis. In the matter of outdoor sleeping, the present writer is inclined to yield to the wishes of his patients, with the proviso that, when sleeping indoors, complete and efficient ventilation must be provided. With regard to feeding, he insists upon the foolishness of attempting to stuff consumptive patients whose digestive powers are greatly impaired; being convinced that it is much better and safer to regulate the quantity and variety of food in accordance with the ability of the patient to digest it. In the last instance, the treatment of tuberculosis and of tuberculous phthisis is subject to the dictates of common sense. There is nothing mysterious about it, and it must be sensible and well balanced in order to be successful.

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Query 6295. — "Complement-Fixation Test in Tuberculosis." J. E. C., Missouri, inquires about "blood tests" for suspected tuberculosis and requests us to send glass discs on which to mail a drop of his patient's blood. He informs us that the patient, a woman, has no cough, no abnormal expectoration, no hectic tendency, no night sweats, and has not lost flesh; she was told, however, by another physician that she had pulmonary tuberculosis. Her child has chronic tonsillitis and, by the same physician is said to be tuberculous. Our correspondent finds no symptoms of this in either case, and he hopes to get light through a blood test made by an expert.

The "blood test" for tuberculosis referred to is, the complement-fixation test and corresponds to what is known as the Wassermann test for syphilis; which latter represents a modification of the complement-fixation test of Bordet and Gengou, originally devised by these two investigators for the purpose of demonstrating the presence of certain immune-substances or antibodies in the blood of tuberculous animals.

The amount of blood-serum required for this test is greater than can be held in a glass disc (of which you speak in your letter), at least 5 mils (Cc.) being required to yield a sufficient quantity of serum for making the test. The container (a heavy glass tube or small vial) as well as the cork must be carefully sterilized by boiling. It goes without saying that the hypodermic syringe which is employed in drawing the blood from the vein also must be sterile, while it should be large enough to hold the full amount of blood (5 mils) to be drawn.

The instruction usually is, to separate the blood clot from the clear serum, and to mail the latter. The director of the research laboratory, however, tells us that, even if the whole of it is sent—that is, without removing the clot from the serum—spontaneous hemolysis does not very often take place; at any rate, for certain other reasons it seems better to leave the serum on the clot as long as possible. Consequently, you may secure the 5 mils of blood, place it in a container suitable for mailing (which, if at all practicable, should have a capacity of just 5 mils, or about 1 1-2 drams), encase this securely, and make ready for mailing, being sure to affix a "special delivery" stamp.

The information given concerning your patient is, of course, exceedingly slim, so that we can form no opinion with regard to it. A marked complement-fixation reaction, just as a positive von Pirquet or other tuberculin test, does not indicate active tuberculous disease, but simply reveals that the person

in question harbors a tuberculous focus somewhere; in other words, is infected with tubercle-bacilli. This focus may be latent, or inactive, and the reaction is positive or not, according to the reactibility of the organism.

If any clinical symptoms are present this fact may be taken as presumptive evidence that there is tuberculous disease especially in conjunction with a positive complement-fixation or a von Pirquet test. (Such symptoms are: Ill health, though not necessarily symptoms of destruction of lung-tissue; possibly only increased dulness and a harsh, sharp percussion-note; prolonged expiratory sounds, interrupted inspiration, and so forth; also, ready fatigue, loss of weight, digestive disturbances of occult origin; enlarged lymph-glands; or various other signs.) Often, the trouble has not progressed far enough to give rise to definite lung symptoms, unless, indeed, rhonchi, râles and other signs of lung disease can be discovered.

If you will study your patient and her child in accordance with what you find said on the early diagnosis of tuberculosis in almost any recent textbook on the practice of medicine, and then consider this in conjunction with the results of your physical examination, of the blood test, and of the skin test (von Pirquet's), you should find no difficulty in deciding whether you are dealing with tuberculosis or not.

BRIEF NOTES FROM OUR EXCHANGES

In this day of pure foods and ultra science, one wonders how so many babies ever managed to live and grow up.

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Pneumonia germ: Smoke it out by saturating the system with calcium sulphide.—J. H. Medaris, *Med. World.*

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In the hospital, I have supervised over 50 cases of oil-ether anesthesia, with absolutely no untoward effects.—W. M. Johnson, *N. Y. M. J.*

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There are those who assert that no man ever was or ever will be born fit to rule another man against his will.—Alex. Y. Scott.

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The orange belt of Texas was hit hard by the November freeze, but not a tree or an orange was hurt about Palacios. No extra precautions were needed.—Waugh.

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The health of any community is influenced directly much less by climate than by conditions which we, ourselves, can regulate.—L. L. Lumsden, *U. S. P. H. S.*

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Valvular disease: The clinical pathologist uncovers many a case that is in need of an adequate combination treatment of mercury and potassium iodide.—Bush, *N. Y. M. J.*

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Now is the time to form world-opinion, so that delegates will go to the peace-table with a constructive and workable program for all Europe in mind.—C. F. Taylor.

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The Federal Bureau of Standards says, short-measure pumps have swindled Illinois customers alone out of at least $500,000 in gasolin a year.—*Indianapolis Med. Jour.*

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Epilepsy: Atropin, gr. 1/100; glonoin, gr. 1/100; and strychnine nitrate, gr. 1/40—"hypo" two or three times a day—prevents fits and tones digestive tract.—W. A. Marner, *Med. World.*

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Caffeine works well in assisting to normalize a functionally deranged (heart) mechanism, but is of little or no benefit in organic disabilities, except as a diuretic accessory.—A. D. Bush, *N. Y. M. J.*

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Nitroglycerin is beneficial when an unduly high arterial tension makes too arduous the work thrown on the left ventricle. It tends to depress the cardiac muscle and the cardio-inhibitory center.—A. D. Bush, *N. Y. M. J.*

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In *The Western Medical Times* for November, Doctor Waugh presents his plan for organizing the practice of medicine as applied to the city of Ogden, Utah, Reckon we'd like to practice in Ogden under that system.

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Gwathmey, reviewing anesthesia, concludes: There should be a person limited to anesthetizing; he should perfect himself in maintaining the lightest surgical anesthesia consistent; the surgeon should let him alone; he should be a physician specially trained in this work.—*N. Y. M. J.*

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It remains for the consultant of tomorrow to learn that something is behind the colon and to discover the significance of that something in cases which surgeons of the Lane School would subject to operative procedure as ignorantly as the internist treats a case of diabetes and leaves the patient out.—R. T. Morris, *N. Y. M. J.*

YOUR FLAG AND MY FLAG

By WILBUR D. NESBIT

Your flag and my flag,
And how it flies to-day
In your land and my land
And half a world away!
Rose-red and blood-red
The stripes forever gleam;
Snow-white and soul-white—
The good forefathers' dream;
Sky-blue and true blue, with stars to gleam aright—
The gloried guidon of the day; a shelter through the night.

Your flag and my flag!
To every star and stripe
The drums beat as hearts beat
And fifers shrilly pipe!
Your flag and my flag—
A blessing in the sky;
Your hope and my hope—
It never hid a lie!
Home land and far land and half the world around,
Old Glory hears our glad salute and ripples to the sound!

Your flag and my flag!
And, oh, how much it holds—
Your land and my land—
Secure within its folds!
Your heart and my heart
Beat quicker at the sight;
Sun-kissed and wind-tossed—
Red and blue and white.
The one flag—the great flag—the flag for me and you—
Glorified all else beside—the red and white and blue!

Courtesy P. F. Volland & Co., Chicago.